

# Alcohol in Human Body



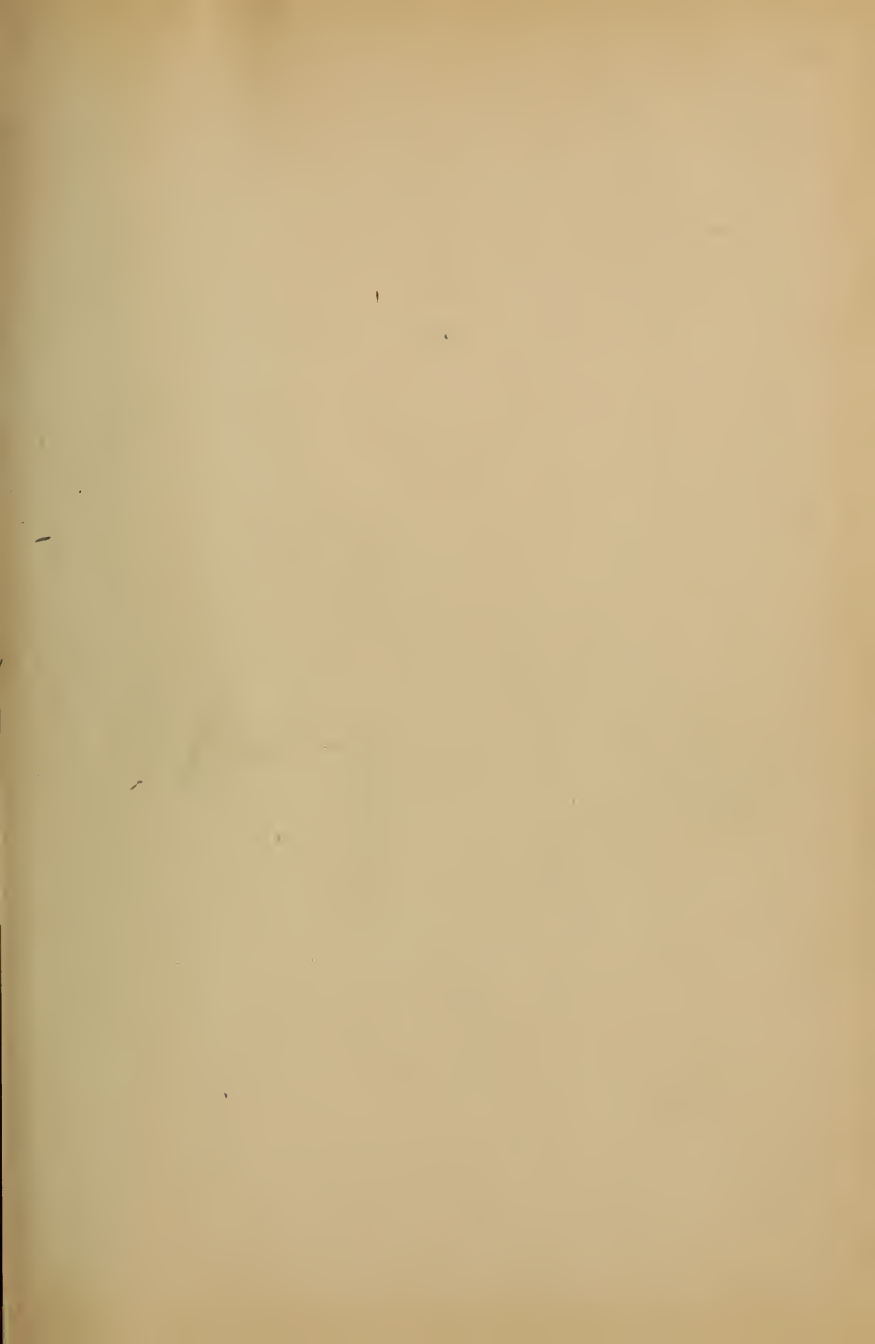


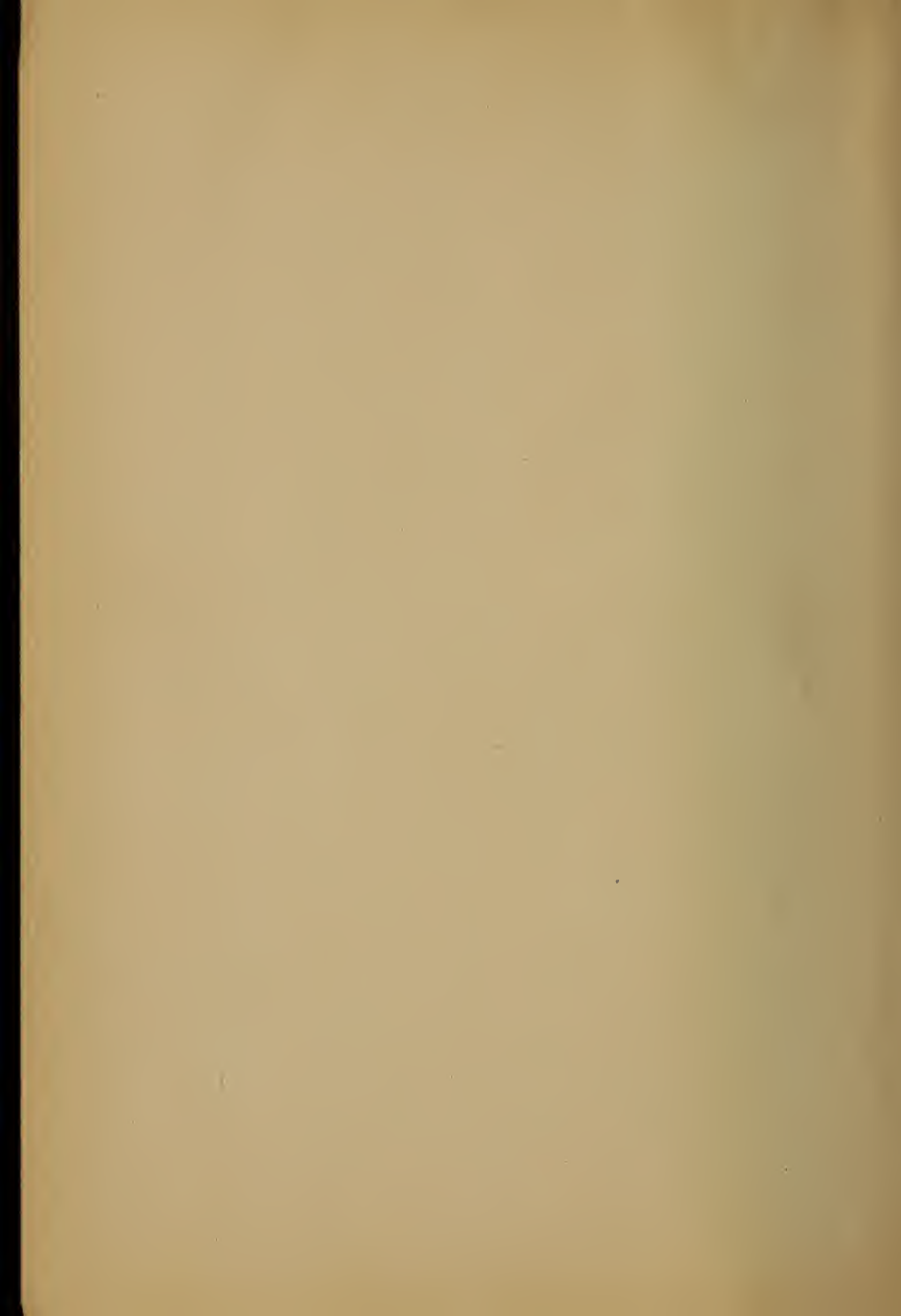
Class RM426

Book A3M28

Copyright N<sup>o</sup> \_\_\_\_\_

COPYRIGHT DEPOSIT.







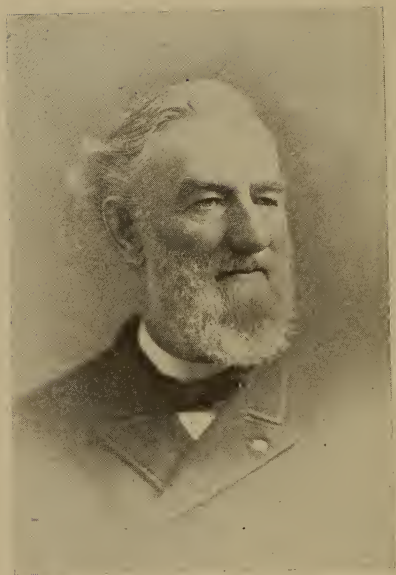












*D. H. Mann.*



PHYSIOLOGICAL

Alcohol ON  
THE  
Human Body...

BY D. H. MANN, M.D.

AUTHOR OF

MANN'S DIGEST FOR NEW YORK (I. O. G. T.)

AND

JUVENILE TEMPERANCE CATECHISM,  
ON ALCOHOL AND TOBACCO.

BROOKLYN, N. Y.

FOSTER'S ELECTRIC PRINT, 275 COURT STREET,  
1903

RM426  
A3M28

THE LIBRARY OF  
CONGRESS,  
Two Copies Received  
JUL 14 1903  
Copyright Entry  
Apr. 20-1903  
CLASS a XXc. No.  
57846  
COPY B.

---

COPYRIGHTED BY  
D. H. MANN, M. D.  
1903

---

11



## CONTENTS.

CHAPTER		PAGE
I.	Laws of Health, - - -	7
II.	Laws of Health—Cont'd. Cleanliness,	11
III.	Alcohol, ^ - - - -	16
IV.	Alcohol—Generation of, - -	20
V.	Alcohol on the Stomach, - -	23
VI.	Alcohol on the Brain and Nerves,	28
VII.	Alcohol on the Brain and Nerves—Cont'd	39
VIII.	Alcohol on the Mind, - -	45
IX.	Alcohol on the Heart, - -	53
X.	Alcohol on the Lungs, - -	61
XI.	Alcohol on the Liver, - -	66
XII.	Alcohol on the Kidneys, - -	71
XIII.	Alcohol on the Blood, - -	73
XIX.	A Transparent Body, - - -	81
XV.	Heredity of Inebriety, - -	84
XVI.	From Parent to Child, - - -	90
XVII.	Alcohol a Gay Deceiver, - -	94
XVIII.	Alcoholismus, - - - -	99
XIX.	Bodily Heat and Drainage, - -	103
XX.	The Air we Breathe, - - -	108
XXI.	Nature's Requisite for Recuperation,	114
XXII.	Is Alcohol Necessary in the Treatment of Disease ? - - - -	119
XXIII.	Alcohol in Medical Practice. - -	126
XXIV.	Alcoholic Dosing. - - - -	130

CHAPTER		PAGE
XXV.	Know Thyself, - - - -	134
XXVI.	An Hundred years—Nature's Laws, -	138
XXVII.	Total Abstinence Soldiers, - -	141
XXVIII.	Rightly Born Children, - -	142
XXIX.	Alcohol a Poison, not a Food, -	153
XXX.	Waste and Repair, - - -	159
XXXI.	Alcohol a Depressant, - - -	165
XXXII.	Alcohol opposes Force and Energy, -	170
XXXIII.	Beer Drinking, - - - -	175
XXXIV.	Beer Fattening, - - - -	182
XXXV.	Fibrin in the Blood, - - -	187
XXXVI.	Summary. - - - -	193

#### ADDENDUM.

XXXVII.	The Tobacco Evil, - - - -	200
XXXVIII.	The Tobacco Evil—Continued.	205

## PREFACE.

---

A Little more than two years since I was asked to contribute some short articles for the International Magazine along scientific lines, which I reluctantly consented to do. I well knew that the effects of alcohol upon the human system had been so often written upon by scientists *pro* and *con* that it was not a new subject to treat.

So with no thought of ever compiling them into book form I commenced writing short papers upon any phase of the great question which happened to be suggested to my mind from time to time without reference to connection, one with another from month to month.

Consequently many repetitions occur, sometimes inadvertently and sometimes designedly. After a little more than a year's continuance I was, for several months, solicited by friends from different sections of the United States to put them in book form as soon as the series should be completed.

Then I saw the lack of uniformity and the necessity for pruning down, adding to and re-arranging their order as well as that for revising some of the titles which were not sufficiently specific for book publication,

But, as in the first instance I complied, with some hesitancy and finally undertook the task. The readers of the magazine will see that I have added to some of the chapters while from others I have taken away, at the same time adding portions of a few of my former contributions to the New York Official Organ, thus presenting this little volume, in my view, upon one of the most important subjects that can be presented to the rising generation.

The articles are all laconic in character, simple in phraseology, and as free from technical terms as was possible to write them. In the light of the foregoing narrated reasons, I must ask the indulgence of my readers, in the hope that the many

apparent irregularities, repetitions and imperfections in composition and compilation may be overlooked.

For the authenticity of the pathological and physiological facts presented, I am too thoroughly sustained by a vast army of renowned scientists to make it necessary for any apology or explanation. They speak for themselves and will stand upon their merits.

Had I known at the onset that this form of presentation would be requested I should have been more elaborate in detail under each head. By a plain unvarnished statement of physiological, or biological references to the functional offices of the human organism and the pathological considerations, of the science and causes of disease, I have striven to impress my readers; that their better judgment will lead them to an irresistible endorsement of the truths set forth.

This little volume is not prepared as a text book for medical students, not being sufficiently elaborate for that purpose but as a reliable, concise compendium, so far as it goes, for the instruction of the youth and young people of the present day, in the great underlying principles necessary to the preservation of our physical and mental perfection.

# ALCOHOL ON THE HUMAN BODY.

## CHAPTER I.

### LAWS OF HEALTH.

The ancient sages and philosophers at Delphos inscribed upon their communications "Know thyself."

There is no study more interesting than that of ourselves and self preservation. In this is embodied our anatomical and physiological beautiful perfection as it comes from the hand of God, and all the hygienic influences that go to preserve or destroy it, now and hereafter.

Physically man is born in weakness, but if he live in harmony with the physical laws of the universe, his whole natural life is blessed, and his stay upon earth is a prosperous one.

Intellectually man is born in utter ignorance, and all knowledge to him is nothing. And yet, under a proper observance of hygienic laws, he holds a sure relation with all the truths and wisdom which God has in store for the human race. But to obtain the key to these treasures the laws governing his moral and physical existence *must* be observed.

It is not my intention to enter into particularizing in this chapter, but simply to generalize a few practical thoughts as a sort of preparatory introduction to the subjects which are to follow on specific lines,

touching the particular effects of alcohol upon the human body.

All the laws that preside over our physical natures are fraught with beautiful results, over which we are lost in admiration in the thought of the grandeur, sublimity and wisdom of the Creator.

By the observance of these laws the muscular power of the human body often becomes most wonderful. There was once a Turkish porter who became so physically developed that he could run at quite a rapid rate, carrying a weight of six hundred pounds. Had he been reared in ill ventilated apartments, on bad diet, with foul outdoor surroundings, and addicted to the use of alcoholic stimulents he would never have reached that degree of power.

I recollect reading of an athlete who carried a three year old ox, weighing over a thousand pounds, more than forty yards, and subsequently killed it with one blow of his fist. He was Milo from Crotono, a pupil of the renowned phylosopher, Pythagoras. On one occasion, while in a school, the pillar which supported the roof gave way, when Milo sprang forward and held it until the teacher and pupils escaped.

He ended his earthly career, in his old age, in a foolhardy manner, in trying to pull a tree up by the roots. He partially succeeded, and partly broke it in two, when one of his hands was caught in the cleft, his strength, in consequence of age, gave out, and being alone, he died in that condition.

Let us then study the laws of physical health, and carefully look into the hygienic influencies surrounding us, and like other animal natures, aye yes, and all

the vegetable creation too, thrive and strengthen, until like them, we shall in each succeeding generation surpass our progenitors.

Let us not defy the natural laws of life in regard to diet, exercise, cleanliness, pure air and proper beverages.

Health is not a something that we add to our being, but it is one of the pre-requisites of life, natural to our existence, when protected according to the laws of nature. Man's organism is a self-sustaining piece of mechanism, under ordinary care, when not ushered into being with any hereditary taint.

But when the laws of nature are trampled under foot, as when man gluttonizes himself, wastes his night hours in revelry, or sleeps in small, ill-ventilated apartments, and indulges in a thousand and one other self-adopted practices which are simply intrusions upon God's laws, health takes its leave.

Over eating and drinking are two of the great causes of disease and depravity. If we put a horse in training for the races he is allowed a very limited amount of feed only. So in disciplining the prize fighter, well selected food in somewhat limited quantities, without alcoholic stimulants is the positive requirement.

The fact is, we can accustom ourselves to eating extravagantly much, or surprisingly little, and possess better, vastly better health and intellect in the latter than in the former extreme.

To prolong life we should look more to the wise dictations of nature. She inclines the young to retire and rise with the sun, but how long is that healthful practice indulged in? Children are allowed for a time,

to follow that natural inclination, but fashion and custom soon step in and thwart nature's plans.

Those who lead the most natural and the least conventional lives live the longest and are the happiest. Nature says let young children run with bare hands, legs and feet ; but conventionalism steps in, and mamma says, "It wont do, it is not genteel and you will grow all out of shape," and she cages up the little feet in closely fitting shoes and stockings. Soon follow deformities in shape of corns, bunions and distorted toes. Oh, vain mother ! what a peacock after all.

Let young children live less by rule and more by instinct in the matter of food and clothing, and we should soon have more ruddy, buxom lads and lassies than we find to-day, and fewer premature deaths.

By that straight line of namby-pamby, figity, self-preservation policy, life often becomes embittered, burdensome and shortened. That is one extreme, while neglect, on the other hand, may prove equally pernicious. Next to proper diet, pure air is one of the essentials to health and life. Oxygen is as necessary to animal life as is good, nutritious food, which we obtain solely by breathing fresh pure air. When we inhale a breath of fresh air, the blood, as it circulates through the lungs, becomes re-oxygenated and re-vivified, and as we throw out a breath, vitiated gasses are exhaled, particularly carbonic acid gas, having been brought to the lungs through the veins.

Long confinement in close apartments produces lassitude, headache, and a general bad feeling ; and often promotes diseases that sooner or later spring up in the various organs of the body.



## CHAPTER II.

## Laws of Health. (Continued.)

## CLEANLINESS.

“Cleanliness is next to Godliness” is an old proverb claimed by some to have originated with John Wesley. But historical writings bear no testimony to warrant such conclusion. On the other hand it seems to be well established that the saying is of very ancient date, and of Jewish origin. In the writings of the ancient Jews we can find the idea running in words like the following; “Outward cleanliness is inward Piety,” or “Outward cleanliness is inward Purity.”

But no one would attempt to prove that cleanliness is not one of the essential attributes to health. The groom knows full well that the horse and the ox are in better physical condition and capable of greater endurance when well groomed than when neglected and their skins allowed to become filthy.

How often the horseman is heard to say that his horse requires less grain, and is capable of faster travel when well “cleaned” than when neglected.

So with all animals, from man down, cleanliness is essential to perfection of health.

The Jews were so observant of health that no one picking over fruit, preparing pastry for the oven, or any food for the table, or while canning meats, was allowed to speak lest his breath might per chance be directed upon and contaminate it.

I have a friend in Brooklyn who informs me that

she once had a servant girl, who had previously lived in a cultivated Jewish family, who had been taught to observe that rule strictly.

The Jews undoubtedly acquired their high regard for extreme cleanliness from observing and in some measure, imitating the ancient Egyptian Priests who reached the highest degree of perfection in their health giving practice, even going so far as to closely shaving all the hair from their heads and bodies every third day and always wearing neat and clean white robes.

But cleanliness of the body is indispensable to good health. Why? Because without it the pores of the skin become closed with a gummy, scaly-like substance. The waste matter of the body that should find egress through them, they being nature's open doorways for its discharge become closed, and disease is generated because this worse than effete matter is, like carbonic acid gas, poisonous to the whole system, unless allowed to pass off.

Louis XIV. at a great gathering once caused a lad to be covered closely with gold foil to symbolize the golden age, in a great procession, which fitted so closely that the pores of the skin became sealed and the young man died from its effects.

Too much importance cannot be placed upon the law of nature which demands that the open pores of the skin, through which is carried off this poisonous perspiration, should not be closed up. It is estimated by some physiologists that of every seven pounds of food and drink we take into the stomach, five pounds escape through the pores of the skin.

Thus how easy it is to realize why so many inflammations and fevers are ushered in, by the perspiration becoming suddenly checked.

It is estimated that a healthy person of ordinary size throws off by the skin in every 24 hours, 18 ounces of water, 5 drachms of solid matter, and  $6\frac{1}{2}$  drachms of carbonic acid. Then how essential that we keep nature's safety valves well open. With other excretory organs of the body, they act as scavengers.

While the drinker is trespassing upon his physical organs by taking alcoholic poisons into his stomach, they have to be disposed of in some way or he would die, as alcohol is never assimilated or utilized in the human body, but must be thrown out in the form in which it entered—alcohol—so the scavengers have an important and arduous task to perform.

The blood takes it up, the action of the heart sends it around through the system, while these scavengers are at work throwing it out through the sewer channels of the body, the lungs, the kidneys, the bowels, the pores of the skin, &c.

But for these wise provisions the drinker would soon render up his final account. The exuding process in the skin assists the lungs greatly in throwing off the carbonic gas.

Our manner of dress causes an accumulation of impurity, and thus, without great care, the skin becomes unclean, and the functions of the pores interfered with.

The masses pay too little regard to bathing, and often allow the clothing to become loaded with impurities, especially the underwear, and thus many of the pores are hermetically sealed, and poisonous excretions are

prevented from passing out through those channels.

That necessitates the care of them by other organs as the liver, bowels, lungs and kidneys, especially the latter, thus making an unnatural and unhealthful demand upon them.

A great amount of heat is generated in the body by the combustion consequent upon the coming together of carbon, furnished by the food eaten, and oxygen taken into the lungs in breathing and circulated in the blood to every part of the body.

This heat is particularly abundant on the surface of the body, to fortify it against sudden changes of temperature, so we find in the skin an almost complete network of little vessels, hence its warmth.

If the blood be kept in vigorous circulation, it keeps the pores so warm that in ordinary changes, the cool air does not close them.

So whatever tends to promote a good free circulation of blood in the skin, not only assists in keeping the pores in a healthy condition, but aids in warding off the evil effects of changes from heat to cold. Such action is best promoted by bathing and friction.

In health the human body maintains substantially the same temperature, in hot or cold weather, in hot or cold climates, in dead of winter or in the blaze of a noonday summer sun, at the equator or as near the North Pole as man has ever been. In any of these extremes the internal temperature of the body remains the same, in a normal and healthy state of the system.

In cold weather or on the application of cold to the body, the oxydation is increased to meet the demand, as much heat is required to warm the surface of the

body, which becomes cooled in its contact with the air of all of which changes we are unconscious, and the circulation is accelerated in the interior of the body, to balance the decrease produced by the cold upon the outer surface.

In heat, as in summer, the circulation becomes increased upon the surface, while nature decreases it in the internal body, by accelerating the respiration, opens the pores of the skin, and the sweat glands being stimulated by the heat, pour out their secretions upon the surface to become evaporated and cool it off.

Thus as before indicated we see that in health we maintain the same degree of temperature under all circumstances. So it is easy to see that bathing is essential to health, cleanliness, beauty, strength and long life. It is one of the most salutary means of warding off and even removing congestions, allaying irritability of the nervous system, and equalizing the circulation when followed with friction by brisk rubbing.

Still another benefit from the bath, a moral one, the man who resorts to it has a higher appreciation of himself than has his scurfy, brown-skinned, eternally dry-backed neighbor of himself. The best known cosmetic is good pure soap and water.

Again the strong connection between the purity of the body and the purity of the mind is wonderful. "Know ye not that this body is the temple of the living soul, and he who *defiles* this temple of the living soul, him, also will God destroy."

An eminent New York divine once said to a noted physician of Philadelphia, "Doctor, I will tell you, after nearly forty years experience, as to the best

means of promoting Christian culture. I have made up my mind that Christianity begins in soap and water."

Tooke, in his "life of Catharine," says, "In Russia, the baths are so generally used, that they have produced a decided influence on the physical character of the nation."

Fabricus tells us that there were no less than 856 public baths in the capital of the Roman Empire, some of them sufficiently large to accommodate 1800 persons at one time.



### CHAPTER III.

#### ALCOHOL.

Far back in the history of ancient times, fermented liquors were known. In Sacred History the first history of the human race of which we have any knowledge, we read that subsequent to the flood (which is generally believed to have fallen upon the earth 2.348 years B. C.), Noah became "a husbandman, and planted a vineyard and he drank of the wine and was drunken."

Homer, a profane writer, 900 B. C., informs us that the Egyptians drank liquor fermented from brandy. The date when vinous liquors were first submitted to distillation is not well established. A London writer, in 1824, Morwood, was of the opinion that the Chinese were acquainted with the process long before



the rest of Asia, Africa and Europe had any knowledge of it.

It is recorded of Albucasis, who is believed to have lived in the 12th century, that he instructed in the *modus operandi* of distilling spirit from wine. But it is not likely that he was the first to subject fermented liquors to the process of distillation, as it was certainly known before his day.

Raymond Lully knew of the spirit of wine in the 13th century and gave it the cognomen of *aqua ardens*, and was conversant with the process of depriving it of water by the use of carbonate of potash.

In the early history of alcohol, it was used at first by ladies, in conjunction with a white powder of an antimonial nature for beautifying their faces and painting their eyebrows then named alcohol, from alkohl or alcohol, obtained by distilling certain vegetables containing saccharine matter, (grape sugar.)

During the reign of William and Mary, the manufacture of spirits was recommended by the passage of a legal act to that end. That seems to have given the impetus to great intemperance among the people, and it was no uncommon thing to see posted in conspicuous places, placards put up by the retailers of spiritous liquors, notifying the people that they could get drunk for a penny and be provided with straw upon which to sober up.

About the first account we have of its general use by the people was that among the Hungarian miners in the 15th century. Between 1700 and 1800 it was in quite general use as a cordial among the English soldiers. From those times it spread rapidly over the

civilized portions of the globe. In Ireland, up to the time of the reign of Henry VII., brandy was not known but soon after, it was introduced there, and its effects were so direful that the Government passed a prohibitory law against its manufacture.

When the English soldiers became acquainted with it they first used it under the delusion that it was a panacea against all ills, and that it made the soldiers fearless on the battle field.

So great has been its destructive influence all along its pathway that arithmetical calculations are inadequate for the tabulating of a tithe of its deadly and damning work.

Could the graves of its myriads of victims be called to open and report, could our alms houses and prisons speak out the sad tale of woe, and could hell itself open to us the recorded pages of its ghastly history and let the world hear the recital, methinks the present and the coming generations would place an eternal seal of condemnation and prohibition upon its infernal ravages and stamp it forever out of existence. It is surely an invention of the evil imp of darkness himself.

“There’s no man so hates his fellow man ;  
It is the work of hell ;  
None but the devil ever thought of such a plan,  
So demon-like, so fell.”

Every intelligent, honest chemist will tell you that alcohol is an *irritant narcotic poison*, poisonous in its effects to a greater or less extent even in small doses. It is the inebriating principle in all intoxicating drinks.

Then is it any wonder that the body, brain and



mind should be injured, dwarfed and in many instances ruined by the habitual use of such a drastic poison?

Whenever any of these drinks are taken into the stomach the alcohol commences its evil mischief and the medical man has frequent opportunities in *post-mortem* examinations to see the inflamed, irritated and poisoned condition of the stomach, liver, spleen, kidneys, heart, brain and other organs. Hospital practice has established the fact that 60 per cent. of the skin diseases there met are induced by alcoholic drinks.

The congested state of the common drunkard's nose is an illustration of the susceptibility of the skin to its damaging effects. Gout and rheumatism are, to say the least, very much increased by it, and often, very often, it is the sole cause of those maladies.

Dr. Norman Kerr, says that out of 1,561 cases of gout which have come under his observation, but one was in the person of non alcoholic drinker, and that one inherited it.

The stomach is one of the first organs to suffer from its use, and the dyspeptic symptoms of the drinkers have been talked in our hearing ever since we were born.

The heart, liver and kidneys of the drinker, if not greatly diseased, are seldome found in a normal or healthy condition. They often load up with a fatty deposit extending even in among their muscular fibers becoming weakened and emfeebled, especially in beer drinkers, known as fatty degeneration of those organs.

The lungs afford the greatest medium for the escape of alcohol from the body and often suffer greatly for

performing that function, for alcohol is never assimilated, never utelized, but makes its escape through the lungs and other scavengers of the body. So we find congestion, bronchitis, laryigitis and consumption often actually produced by alcoholic drinks.

But among the worst effects of all are those upon the brain and nervous system under which circumstances the drinker is not the sufferer, but all who are in any way connected with him have to share some of its evil consequences in one way or another.

Now the seat of intelligence is trespassed upon, and the drinker gradually robbed of his manhood.

Alcohol often dethrones reason and blunts preceptive faculties, not infrequently leading to paralysis, epilepsy and insanity and other kindred maladies often handed down from one generation to another, the most terrible of all results, the most damable of all inheritancies.

So science is daily speaking to us in thunder tones, warning us that alcohol is a damage not a help to us, not a friend but an enemy in diguise like a thief in the night, stealing health, reason and wealth from the drinker.



## CHAPTER IV.

### ALCOHOL,—GENERALIZATION OF.

Alcohol is a substance nowhere to be found in nature, but obtained only by man's evil ingenuity in bringing about vinous fermentation, and that rotting process

producing glucose or grape sugar from grains and fruits, from which substance alone can alcohol be obtained.

No healthy constitution requires it, but on the contrary it is always detrimental in health, and yet it is a deplorable fact that in some form or other alcohol has been used as a drink for centuries past, which fact is one of the prominent arguments in its favor advanced by its advocates.

But on the other hand they never tell us how fearfully human longevity has been lessened by its use, that in olden times men lived hundreds of years, while to-day the average duration of human life is only about thirty years, and that alcoholics have played a prominent part in its reduction.

The distillation of spirits from wines was not known until in the eleventh century, and was called "*Spirits of Wine*." So called because it was found to be an intoxicant, which was thought to be a spirit.

When taken into the stomach it always inflames that organ more or less according to the amount taken.

It weakens the blood vessels, overtaxes the heart incites diseases of the kidneys, liver, spleen, lungs, brain and leaves its damaging marks upon every organ or fiber of the body with which it comes in contract.

Professor Sartin of St. John's Hospital, London, says, "It is indeed a mocker. It promises us strength and mocks us with weakness. It promises us endurance and mocks us with faintness. It promises us substance and mocks us with shadow. It promises us heat, and mocks with cold. It promises us with moisture, and robs us of the moisture we already possess. It prom-

ises us life, and mocks us, with premature death. It promises us intelligence and wit, and mocks us with confusion. It dazzles us with visions of happiness, and plunges us into the depths of despair."

Truthfully might the lerned Professor have added, that under its use men become sickened and dwarfed, enfeebled in mind, corrupted in morals, their children imbecile, and their physical existence or structure only the woof of one disease woven into the warp of another, some mute, some blind, some deaf and some idiotic.

There are many other physiological and pathological changes produced in the system by the use of alcoholics of which I shall speak only in a generalizing way in this chapter.

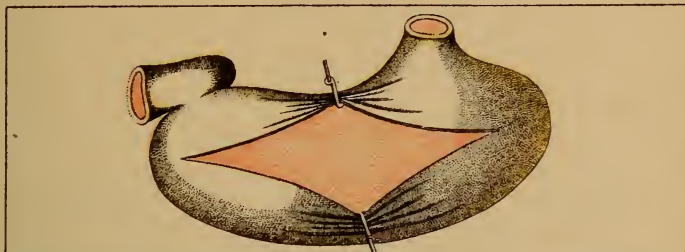
It robs the drinker of his vital heat, it vitiates the blood, it inflames the stomach, it weakens the blood vessels and redens the face, irritates the lining membrane of the mouth, throat, lungs, and the whole alimentary canal, it destroys the complexion, it mystifies the judgment, paralyzes the will and by its changing effects upon the brain it dazzles the mind with visions of happiness and wealth, but plunges the consumer into despair and poverty.

It stamps the whole system with diseases, and transmits it to innocent posterity, thus visiting the sins of the fathers and mothers fearfully upon the innocent children.

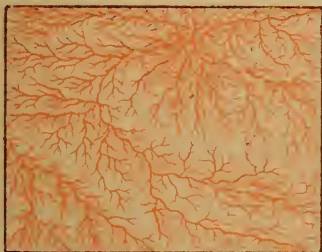
It is both a brain and body poison, and in short it is a general deranger of the whole system.

Its specific effects upon particular organs of the body will be more fully exemplified in the succeeding chapters.

# DIAGRAMS OF THE STOMACH IN VARIOUS CONDITIONS.



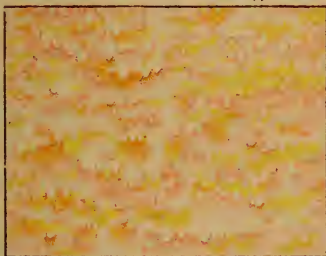
Healthful.



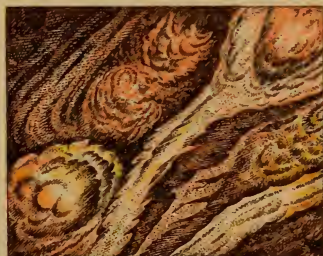
Moderate Drinking.



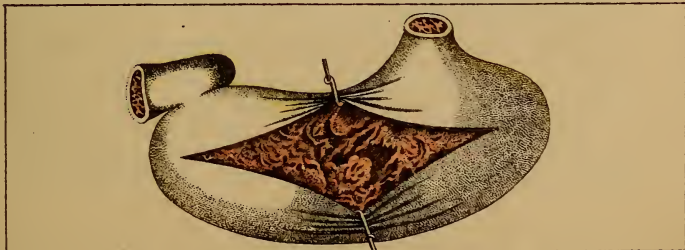
Drunkards.



Ulcerous.



After a long Debauch.



Death by Delirium Tremens.





## CHAPTER V.

## ALCOHOL ON THE STOMACH.

In a cursory view of the human body we have little conception of its intricacy and its perfected mechanism. Man, the most wonderful of God's created beings and king over all, is surprisingly constituted and astonishingly endowed, and presents study for scientists and will continue to through all coming ages.

To obtain a clear idea of the physiological effects of alcohol on the human system, a little at least should be known of the anatomical structure and functional offices of its important organs, particularly of the great, essential and much abused one, the stomach.

That is a large hollow sack with a beautifully arranged anatomical construction for the performance of its important offices. It is composed of an internal membrane called the mucous or villous coat, mucous because it secretes a fluid known by that name, or villous because its inner surface is thickly studded with minute villi resembling the nap on velvet.

Next, three distinct layers of muscular fibres overlaying each other, running in opposite directions, longitudinally, obliquely and transversely, and lastly a membranous covering over all, denominated its serous coat because it secretes serum for the prevention of irritation in its contact with the intestines, diaphragm, peritoneum etc.

The inner or mucous coat has some very important functions to perform in the great economy of life.

To promote or assist the process of digestion, it sec-

retes or throws out from the little villi a fluid denominated gastric juice, one of its component parts being pepsin, from the word *peptein*, to digest, which performs the office of a ferment to produce certain changes for the dissolution of food.

The quantity of gastric juice secreted by a healthy adult is estimated from five to twelve pounds per day, although in some instances it reaches a still greater amount. These little secreting villi or tubes are really minute glands bound together in a mass over the surface of the membrane by a stringy fibrous material denominated by anatomists, *connective tissue*.

Thus the stomach is also called a glandular sac.

The exudation of the gastric juice is invited or brought out by the titillation or contact of substances taken into the stomach. Upon their introduction the secretion or oozing out takes place in manner similar to that of perspiration from the skin, assuming at times the form of drops and even little streamlets.

The amount secreted, much or little, is always in keeping with the amount of food to be digested.

The gastric juice together with the mucous also secreted, mingles with the food substance received into the sack and performs the primary preparatory dissolving process for digestion, the latter, however, not being completed until the dissolved mass passes out from the stomach into the duodenum or first intestine, where it receives bile from the gall-bladder supplied by the liver, and pancreatic juice from the pancreas, the assistance of which completes the process of digestion.

The office of the triform muscular arrangement of the stomach is to contract and relax it alternately in



every possible direction, which is done consecutively when containing food, in order to produce a churning-like operation to facilitate the mixing of the juice secreted, with the food and hasten its liquefaction.

After the completion of the digestive process the nutritive portion of the mass, the chyle, is separated and taken up by the absorbents and through the liver and blood vessels is carried to all parts of the body and deposited for the building up or repairing of its changing and decaying material.

Whenever alcohol is in the stomach in conjunction with food it prevents or retards digestion by precipitating the pepsin, until it, (the alcohol) passes out and the pepsin is re-dissolved or a new supply is secreted with the gastric juice.

So the effects of alcoholics upon the stomach are not founded upon speculative imagination, but upon scientific facts arrived at from ocular demonstrations, symptomatic changes, and the revelations in *post mortem* investigations.

While alcohol will dissolve many of the gums, resins &c. it will not digest food. Whenever the drinker takes any of the alcoholic beverages into his stomach he interferes with God's plans for his nourishment, health and preservation.

The direct effects of alcohol upon the stomach were very clearly demonstrated by the long continued experiments of Dr. Beaumont upon Alexis St. Martin, the Canadian boy who had an opening in his stomach by the accidental discharge of a musket in 1822, the experiments continuing for a long series of months, then taken up along the same lines by Dr. Sewel of

Washington, all the results being subsequently verified by like experiments upon an Ethiopian peasant girl, Catharine Cute, who by an accident also had an artificial opening in her stomach.

The first apparent effect following the introduction of alcohol into the organ is that of an irritant shown by redness of the lining membrane and enlargement of the myriads of little blood vessels, which, in their natural state are so minute as not to be visible to the naked eye, now so weakened and distended as to be plainly seen.

Farther along by a still greater exhibition of the same effect, is the appearance of large bluish patches showing an enfeebled state of the vessels and impaired state of the blood, not infrequently leading on to actual ulceration.

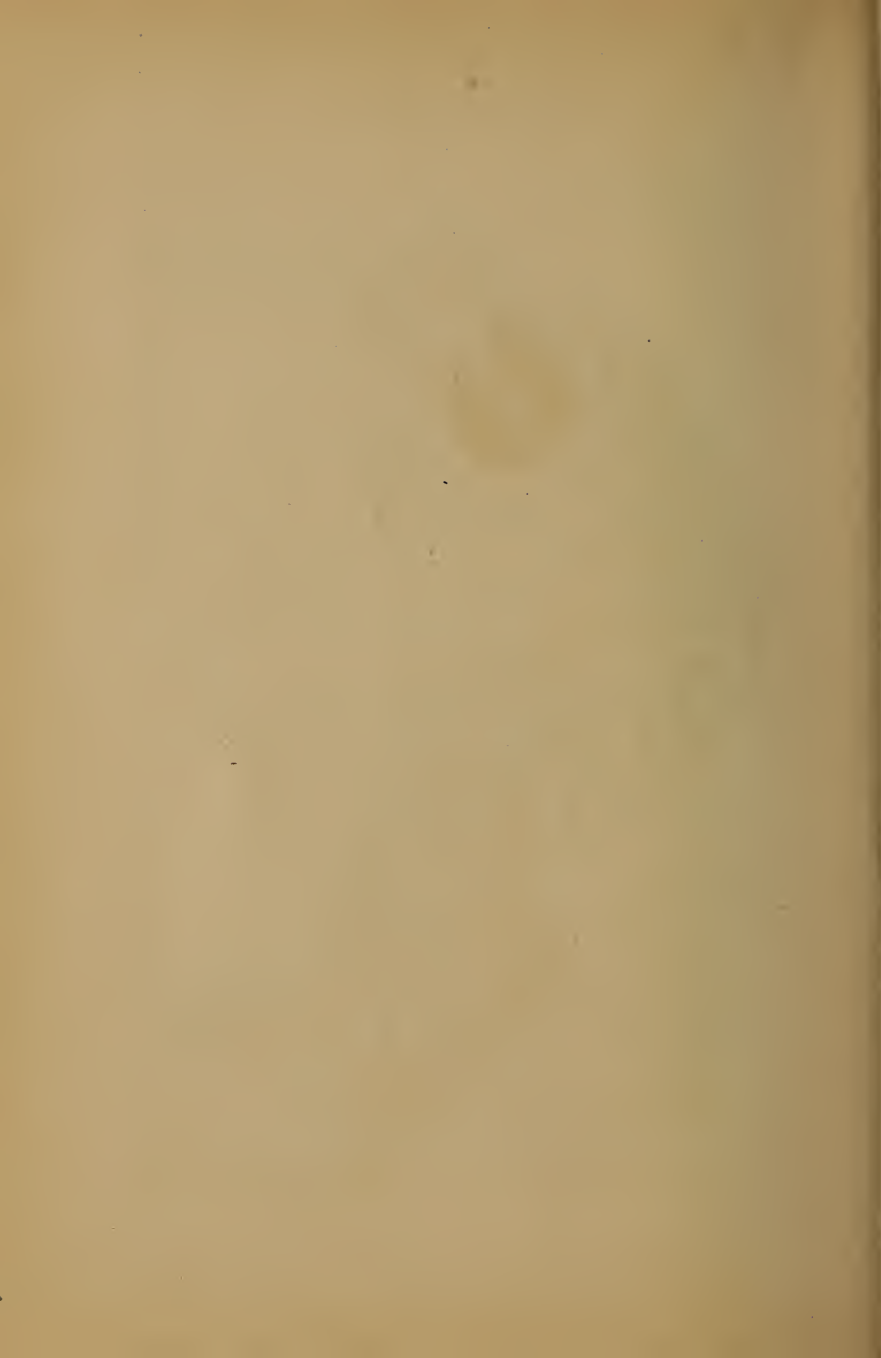
In the confirmed drinker this weakening is often carried on to the extent of producing *mania a potu*, or delirium tremens, when the vessels are so weak that the blood exudes from them; and becomes partially digested it is ejected by the process of vomiting known as "black vomit."

Another very serious effect upon the stomach, is softening of its mucous or lining membrane often accompanied with ulceration, resembling in appearance the apthous sore mouth of a child in scarlet fever.

Again sometimes a cancerous disease is produced, leading to much suffering and death. The writer in his own practice has met with a case of each of the last two described, and he was permitted an autopsy in each case, which verified the diagnosis in both instances. Yet neither was in the person of a drunkard,

THE CANCEROUS  
STOMACH.





but each one was a daily moderate drinker, and the latter was a woman living on a farm four miles from the nearest village. Her drinking habit was cultivated by the daily use of wine, until the abused stomach demanded something stronger to produce the accustomed effect upon its little nerves which had become partially paralyzed.

Among the first functional disturbances experienced by the drinker in such cases is a *mucons catarrh* of the stomach, which attacks nearly all drinkers to a greater or less extent, ushered in by morning thirst, a dry, clammy mouth and often after the first morning dram the stomach rebels and vomiting ensues, ejecting a glairy, ropy muco-fluid. This sometimes supervenes even before anything is taken into the stomach in the morning, or following a draught of water. It is always succeeded by more or less inflammation, becoming chronic.

And yet the drinker thinks he must resort to frequent potations of alcoholics to assist the tired stomach in its task. Well, it does help it out, and helps the drinker out too, for he is generally out of the world prematurely.

The digestive process is one of the most important functions in the human economy. A good operative stomach is as essential to life, health and happiness as is a good working engine to the speed of a railway train.

Whatever deranges the functions of the stomach interferes with the whole workings of the human organism.

A vigorous stomach is indispensable to good health,

muscular strength and mental vigor. Yet how often this derangement is a self produced one, brought on by indulgence in the use of those things which all reason and nature teach us is wrong, but persisted in, in spite of the light and knowledge of the age, simply to gratify a morbid appetite, and that generally a cultivated one.

One of the terrible afflictions of the drinker is known as alcoholic dyspepsia which sends him at an early hour, with unsteady muscles and trembling limbs, to the saloon for his morning dram to excite to action his worn-out stomach, to create a sensation which he deludedly denominates, appetite. A morbid sensation.



## CHAPTER VI.

### ALCOHOL ON THE BRAIN AND NERVES.

How often and aptly physiologists quote from Cassio's exclamation in Othello—Shakespeare: "O, God, that men should put an enemy into their mouths to steal away their brains! That we should, with joy, revel, pleasure and applause, transform ourselves into beasts! To be now a sensible man, and by-and-by a fool, and presently a beast! O, strange! every inordinate cup is unblessed, and the ingredient is the devil."

A practical observer can, at a glance at a man under the influence of alcoholics, determine to a certainty just how far his brain is under the immediate damaging effects of the drug.

If he be noisy, boisterous, songful, glib, rich without money, hilarious, or proclaiming his great wisdom, or atheltic powers, the observer knows that the upper and greater mass of the brain, the *cerebrum*, is involved, as that is the seat of judgment or moral and intellectual faculties, all of which are now manifestly weakened and thrown into discord. Next we see the victim unsteady, staggering, tottering and falling. It is now patent the *cerebellum* or lower portion of the great mental organ, the brain, called its base, is involved in the damage, as there is centered the controlling nerve influence over the muscular movements of the body. But at length the vanquished subject is on his back with deep, heavy, sonorous breathing, when it is at once apparent that the *medulla oblongata* or head of the spinal marrow is embraced in the poisonous grasp, and respiration is impaired, from the temporary paralysis of the nerves which preside over the muscles of respiration.

One reason for the silliness in some men on a drunken spree, and in others for the rage, ugliness and quarrelsomeness, is that the brain is poisoned, its albumen hardened, its blood vessels paralyzed and congested, thus unbalancing the mind, of which the brain is the temple.

It is a well established physiological fact that alcohol scars the brain, in that it enlarges the cells of the brain tissues, and from that enlarged state they never resume their former condition, but remain as a latent tinder box, ready to ignite at the touch of the first spark.

The reformed often feels, after a time, that he is



safe, having conquered his o'd enemy, but one drink now will show him that he is not his own master, but is again a slave to the old appetite. What a price for a drink.

So we see in this deranging process, alcohol first irritates and disturbs equilibrium, then poisons and weakens the *vaso motor* nerve system, and finally produces almost deadly sedation, and quite often so. Under such circumstances can it be possible that men can long retain their normal soundness of mind? Can they be stable thinkers? Yet they often prove themselves so by the frequency of their lodgings under the manger.

To maintain its equilibrium, the brain must be supplied with blood free from any irritant poison, well oxygenated, which cannot be when alcohol is taken into the system. The great mass of the blood is water, and nature demurs to the introduction of any other fluid, as it is superfluous and must be expelled.

Doubly objectionable then is an irritant like alcohol, which can do nothing but mischief. It is self-evident that the habitual use of alcoholics disturbs and weakens nutrition of the brain substance and the general nervous system.

While the brain suffers, other organs dependant upon it for nerve force, suffer with it in the punishment. For instance, it is no uncommon experience to meet an habitual drinker with drunkard's blindness, technically known as *Amblyopia Potatorum*, caused by want of nourishment for the optic nerve, causing, primarily, a mist or cloudy appearance before the eyes, rendering objects indistinct, which often increases to



the degree of blindness. The writer has in mind several cases which have come under his observation.

Then to the drinker let me say, stop, think, ponder and weigh the consequences, then turn to the right and keep in the middle of the road.

It is a clearly proven fact that the habitual use of alcohol as a beverage cannot be indulged in even in very small quantities without injury to some of the bodily organism which will manifest itself sooner or later.

Some of the parts which are injured even by small doses of alcohol, are the general nervous system, particularly those nerves so closely connected with the brain supplying the organs of hearing, of sight, of taste, of smelling, etc. Observations and new experiments by scientists are constantly confirming these truths.

Learned medical men all along down the ages have raised their warning voices against its use as a beverage, even before the Christian era and in every century since.

No well informed physician will for a moment (unless *he* has become a slave to the habit) contend that a man in ordinary health is in any way benefited by its use any more than dumb animals would be. Nor will it in any way accelerate the amount of mental or manual labors.

Read what the eminent surgeon, Sir Henry Thompson, once said: "There is no single habit in this country which so much tends to deteriorate the qualities of the race, and so much disqualifies it for endurance in that competition which in the nature of

things must exist." As a rule the drinker's judgment is impaired, thus his appetite is uncontrolled and drink seems to be the god he worships and too often it predetermines his own physical condition and that of his children.

Reason, judgment, conscience, pride, self-respect, regard for loved ones and a general good name are all subordinated for that god, appetite. Pain, disease, debility, and brevity of life staring him in the face at every step in his dissipated career seems to be no barrier in the way of the drunkard's appetite, regardless of the value of a vigorous stomach, pure blood, healthy nerves, a clear mind and sound judgment.

Why is it that the majority of drinking men are not as keen of perception as the abstainer?

Because of the enlarged brain cells above mentioned. Alcohol in the brain, that great "Dome of thought and palace of the soul," in its pranks among the nerves and tissues of that organ is as ruthless as the paw of a Wall street bear.

The physical benefit of alcohol to a healthy man is about as difficult to find as the jaw to the mouth of a volcano or the face to the head of a river.

Strange that with such glaring facts before us warning us of the danger of alcoholic indulgence, it has so many devotees.

But it is only another of the surprising evidences that different people arrive at different conclusions from the same line of facts before them, just as diverse opinions are formed of a picture when viewed by two different individuals. An artist once showed a gentleman a painting he had just finished. The gentleman

said, "My good Sir, you paint birds beautifully, you should never paint anything else than birds, those ostriches are most life-like."

The distinguished artist turned to him saying, "These are not ostriches, they are angels."

If a man is to be governed by appetite, the whole physical system will become dwarfed and wrecked. Think for a moment what mankind would become if freed from the early infirmities and depleted constitutions consequent upon our international indulgencies dictated by appetites and passions, handed down through the ancestral line, taking new additions in their course, which, like the mountain glacier, will by-and-by terminate in one tremendous avalanche and crash from its own accumulated weight.

Providence has ordered that all animal natures shall thrive, improve, strengthen and surpass their ancestors. But man, by yielding to appetites and passions thwarts God's primary designs and dwarfs his own kind.

How careful he is to improve the stock of his dumb animals by keeping them up to the demands of nature's wise laws. So, too, have we improved the vegetable kingdom, almost beyond conception, and still we strive on for greater perfection. But man alone of all the earth sinks below his nature by yielding to appetites and passions.

The first apparent effects of alcoholics upon the human economy are manifest upon the nervous system, composed of the brain and spinal marrow with the nerves ramifying out from them.

Much that would be useful to a student in physiology might profitably be noted of the minute and deli-

cate construction of these organs, which would not be so interesting to the general readers of a magazine, thus my excuse for generalizing.

The mental faculties are fixed or located in the brain which nature has carefully enveloped or inclosed in a delicately constructed membrane denominated the *pia mater* or the soft mother of the brain, which is not, simply a cover to its exterior but dips down into or between all its convolutions or folds, with its net work of blood vessels through which is a constant and copious flow of blood. Enclosing all this is another membrane for protection, thick and tough, comparatively, called the *dura mater* or hard mother of the brain, which serves as the lining to the skull.

The *cerebrum* or upper and greater mass of the brain is divided into two distinct hemispheres or lobes, which really constitute a double brain, which is the seat of the intellectual faculties, the thinking and reasoning center. Below this, in the base or bottom of the skull is another and all-important portion of the brain denominated the *cerebellum*, about the size of a small tea cup, somewhat flattened. This is the headquarters of the commands for muscular movements, and governs locomotion and all the voluntary muscles.

Next is the spinal cord, the head of which is known as the *medulla oblongata*, from these the great nervous system has its origin, which is divided into three classes, the *spinal*, consisting of 31 pairs, running from the spinal cord through openings provided for them in the bones of the spinal column to various parts of the body; the *cranial*, subdivided into 12 pairs which have their origin in the *medulla oblongata*, and the *cerebel-*

*lum*, running in their regular order to the nose, eyes, face, ears, tongue, throat, lungs and stomach, with a single branch extending to the heart. The *sympathetic* or nerves of organic life, a sort of ganglionic nervous chain running out from either side of the spine, with their ramifications distributed to the chest and abdomen. The nerves arising from the right side of the brain cross over as they pass from the *medulla oblongata* to the left side of the body, and those from the left in their origin pass over in like manner to the right side. Thus any disturbance in one-half of the brain sufficient to produce paralysis, manifests itself in the opposite side of the body.

Strange as it may seem, this delicate pultaceous mass of matter denominated the brain, the seat of thought, reason and sensation, through its messengers, the nerves, is not itself in the least degree sensitive to touch or injury. It may be touched, cut or punctured without pain.

One of the first effects of alcoholics is to paralyze the nerves that control the minute blood vessels, thus allowing an abnormal amount of blood to pass through them, and with deleterious velocity. Thus the red flag of danger that the drunkard constantly exhibits in his eyes, nose and face. All this is weakening, not strengthening, and its exhilarating influence is of limited duration, always followed by more or less depression, leaving the system worse for the wear and tear of the operation. Next the spinal cord is affected, then the muscular system by loss of power to a greater or less degree.

The *cerebrum* becomes affected, mental power dimi-

nished, blunted and demoralized, judgment weakened, reason robbed, conversation running riot and often meaningless, the animal instincts come to the front and assert themselves and the drinker is often given over to vileness, meanness and lust, and frequently to brutality without the slightest provocation.

If imbibation be continued much beyond this period, temporary paralysis of the brain and spinal marrow supervenes sufficiently to drop the poor victim into stupor and unconsciousness, which would be a blessed state if it were one of the earlier instead of the latter results, so far as others than the drinker are concerned, at least.

Now the whole system is in an uproar, which requires days of abstinence for recuperation, and then a latent spark is likely to linger which is ready to ignite and burst into a blaze at any moment at the touch of strong drink again.

Truly the way of the transgressor is hard, for man has no moral right to thus trespass upon his physical frame, the temple of the human soul.

And yet some would have us believe that this poison, alcohol, is a good creature of God and acts upon man as a sustenance.

Nature has taught us that the elements of true, natural, healthful, supporting and tissue-building food properties are furnished us in milk. The nursling is put upon its use from its first hour of existence as nature's true preservative. No alcohol is furnished in its make-up, but its composition is water, albumen, sugar, butter and salts.

Food is any substance, which on being introduced



into the living economy is assimilated, oxydized, generating heat and sustenance for the body and giving it force, all of which are necessary for animal life without injury thereto. As shown in former articles, alcohol does not build up or repair tissue nor does it produce bodily warmth, but its effects are quite the reverse, thus it is totally discarded from the supplies of Arctic explorers as extremely dangerous when used on those expeditions, and explorers, as Dr. Nansen, Livingstone, and others, religiously eliminated all alcoholics from their supplies, thereby husbanding the vitality and muscular force of their men.

Nor is it necessary as a medicine. Since 1873 14,000 patients have been treated almost entirely without alcoholics in the London Temperance Hospital, even tinctures were eliminated which had been prepared with alcohol, they being supplanted with watery infusions, with unprecedented results, which led Dr. B. W. Richardson, one of its learned staff, to say, in 1879, "Sick people have no more need of wine, beer or spirits than healthy people."

Man alone, though he may be possessed of the devil, is responsible for the moral, physical and financial inroads which intoxicating liquors have made and are making. The devil with all his emissaries could not make one drunkard if man did not permit himself to be duped by his satanic wiliness. The tempter, the drunkard-maker, is abroad in the land and the question is, how can he be silenced and the tempted saved?

So long as drunkard-makers are licensed to carry on their nefarious business just so long will there be new drunkards in the land. What then is the remedy?

Legal prohibition. For every lordly or bloated saloonist there are scores of Lazaruses, houseless, homeless and friendless, with nothing but hovels for shelters. For every saloon there are hosts of corresponding pictures of despair, orphans without friends, mothers and children without food. All from the plague infected spots licensed and protected by law to do their deadly and damning work scattering the germs of disease and death as the winds scatter the leaves of autumn, leading to the physical destruction of the body and moral ruin of the soul.

The thought of the thousands who have acquired the fatal appetite at the licensed bar, of the drunkards confirmed, of families wrecked, of sons and daughters ruined, of societies corrupted by the demoniacal seeds sown in these pitfalls of the devil, legalized, protected, petted and perpetuated by the laws of our boasted Christian land, defacing God's image in man and putting the imprint of the devil's counterfeit stamp upon rum's unfortunate victims, dethroning their reason, sapping their vitality and unbalancing their brains almost sickens one of human nature.

Such legacies are satanic in influence and damnable in practice. Such silent scorpionic bequests of the drinker to his offspring will embitter *his* cup of eternal vengeance.

If man lives in harmony with the physical laws of nature God will bless his efforts and fill his heart with joy ; but woe betide him who bids them defiance or attempts to trample them under foot by obeying the fiery impulses of appetite and passions.

Then let us so live that we may fully enjoy the



blessings of life in this beautiful world of ours with its mountain steeps and its valley planes, its rippling brooks and its roaring cataracts, its sunshines and its storms, its flowers, its fruits and its sweet singing birds, all in harmony with God's natural laws, in one grand triumphant march to final victory, masters of themselves.\*



## CHAPTER VII.

### ALCOHOL ON THE BRAIN AND NERVES.—(Continued)

The brain is a great telegraphic center, and the body in many respects is very like the railway arrangements with its telegraphic appliances. The brain is the general office, the spinal cord is its telegraphic wire, sending out innumerable ramifications of little nerve fibers, some of sensation and some of motion to all parts of the body.

On the railway lines of the world each has a head office from which to direct the movements of its almost innumerable number of trains, and a perfect schedule for their departure and arrival from and to different points. In each office there is a telegraphic communication with all the others of the company, especially with the head office from which the dispatcher sends out his orders. All is harmony and every thing moves with wonderful regularity.

But suppose a drunken dispatcher were put in charge,

---

\*See Chapter 22.

and by his destructive hand trains were started in opposite directions on the same track, at the same time, in the same section, soon there would occur an appalling disaster. On another line he might send out a wildcat engine on the track of an incoming express train, and soon another crash would follow. All because of rum.

In many respects the human body resembles, in its arrangements, the railway with its magnetic telegraphic appliances.

Like the telegraphic institutions, each organ of the body has its own private station and its own electric currents, all being governed by the general office in the brain. It often happens that some organ becomes partially incapacitated by disease or injury, when some sympathetic fiber is called upon to take up its work until damages are repaired.

There is nothing in nature more perfect than this most wonderful electric mechanism of the brain and nervous system.

The nervous system in the human body serves two great objects, having two different and equally important structures or appliances for the furtherance of their functional duties.

These beautiful little human telegraphic wires, this nervous ramification for electric currents have two functions in this telegraphic system. One is to carry commands from the brain to promote motive power in the limbs, or in any portion of the body, in answer to demands of the will, etc. The other to convey sensations to the brain from the whole surface of the skin.

All information is sent to the brain, and there clas-

sified into different heads according to its nature, and thus the different orders are sent out to the several departments of the body.

The cars of life on the human railways of our bodies are governed by this beautiful and perfect electric network. How insane for a man to trespass upon it in such a way that wildcat trains are let loose to run, regardless of nature's regulated plans, as is the case when these electric batteries and connecting nerve wires are disabled as they are when alcohol is taken into the system which hardens the albumen and paralyzes them, disabling in their functional responsibilities.

The drinker's first drams unman the cerebrum, or main brain, derange his faculties, lessen his judgment, and the first wildcat train is let loose, and he sings, laughs, swears and often becomes pugilistic.

He drinks on and the base of the brain, the cerebellum is thrown into discord, he staggers and swaggers, and a disabled engine is running without a guiding hand; he falls to the gutter and the engine is off the track, upset upon its side.

Now the medulla oblongata, or head of the spinal marrow is out of order, and as that presides over the powers of respiration the poor unfortunate lies half alive only, with a florid face, diffused eyes and a low, slow guttural breathing; inspirations suppressed to an alarming degree. He gasps, he dies, asphyxiated as if poisoned by opium or chloroform.

When alcohol is taken into the stomach it is an irritating, poisoning intruder along this network of electric batteries and wires, and the whole machinery is thrown into confusion; the drinker often running

off the track and is wrecked because of the wires being paralyzed and down, so to speak, and sometimes as above indicated all communications between the organs of locomotion and life are suspended and the curtain drops.

How familiar we are with the tidings of sudden deaths which ought to call to our minds the causes which produce them.

How much more precarious are the lives of busy men than in the days long ago.

We hear the toll of the funeral bell and pass on with simply a shake of the head. Why this deplorable change?

Many are overworked and many are stimulated on to overtaxation by the use of strong drink under the delusion that they are being strengthened for greater endurance, when in fact every drink adds another scuttle of fuel to the furnace that is burning out the overtaxed brain.

The oil soon runs low, as in a nearly exhausted lamp; you turn the wick a little higher, and for a few minutes you get a more luminous flame with an increased drain upon the little remaining oil, when the light soon dies out and the scene closes and darkness prevails. Such is an overstimulated life.

It has long since been thoroughly established that alcohol is to be found in the brain of one who dies in the state of inebriety. Thus it is certain that alcohol received into the stomach enters the blood and circulates to the brain, little, if at all changed.

Dr. James Kirk of Scotland was one who over seventy years ago, found on dissecting the brain of a man who

died in a state of intoxication after a debauch, that it contained alcohol with an unmistakable odor of whiskey. When a portion of it was taken out on a spoon and held to a blaze, it burned with the characteristic blue flame of alcohol.

Dr. Oyston, of Aberdeen, at about the same time, made a desertion of the brain of a woman named Cattie, who drowned herself when intoxicated, and with another physician he examined the fluid collected in the brain, with the same result as that reached by Dr. Kirk.

Dr. Percy instituted a series of experiments upon animals and had no difficulty in obtaining alcohol from the fluid of the brains of those to which alcohol had been administered by the stomach, which was indicated not only by its odor and inflammability, but also by chemical tests and its power after it was distilled from the fluid, of dissolving camphor.

Whatever deteriorates or disorganizes the blood, injures the functions of the brain, because so much of that fluid circulates through it.

The brain is the seat of the mind, the fountain head of character, so when the brain is impaired character is deteriorated and society suffers.

When blood is charged with alcohol it fails to carry the requisite amount of nourishment and oxygen, thus the functional offices of the brain become deranged, the mind is weakened and the whole cerebral apparatus is out of order. The mind indicates the man, and Emerson says, "Thoughts rule the world." When the brain is excited or irritated by alcohol it is gorged with blood and the thinking powers are weakened,

thus several diseased conditions of the mind are produced.

Alcohol creates irritation of the brain and hardening of its albumen, which is about forty per cent of its composition, congestion, leading to impairment of the perceptive faculties, of the reasoning powers, of the judgment, and in extreme cases to delirium, insanity, appoplexy, paralysis &c.

Its first action is that of an excitant followed by sedation and if long continued, by stupefaction. Another effect which it produces through the agency of the brain, is that of exciting the lower or animal propensities.

The nervous system is particularly susceptible to the pernicious influences of alcoholics, as is so generally observed in the drinkers of that poison. The nervous and vascular systems are among the first in the human body to suffer from its direful attacks.

While a little more than fifteen per cent of the deaths as a whole in our country are attributable to diseases of the nervous system and the digestive organs, it is a statistical fact that more than fifty per cent of the deaths among the drinkers of alcoholic beverages are due to diseases of these organs.

Physicians everywhere are awakening to the important subject of the effects of alcohol upon the human system. In Canada they are giving it particular attention. The question was asked of one thousand three hundred and fifty-five Canadian Physicians if the general health would be improved by total abstinence, and one thousand and sixty-eight replied in the affirmative.

On moderate drinking a question was asked as to its permanent effects, and nine hundred and one out of thirteen hundred and forty physicians answered, that the use of intoxicants, even in moderation, is injurious to health, and to the activity of body and mind.\*



## CHAPTER VIII.

### ALCOHOL ON THE MIND.

Among the first effects of alcohol, as before indicated, are paralyzed nerves that supply the minute blood vessels, the nerves that regulate the flow of blood through the capillary net work of blood channels, thus sending the blood through the body with increased velocity and distending every capillary tube until the surface is flushed with crimson.

While it cheers and exhilarates for the time being, it imparts no nourishment, force or power to the system, but distrubs mental equilibrium and blunts the mind, and if long continued, mental weakness, muscular languor, lessened will power and a general depressed effect supervenes.

Mind is the great moving power of the world, the far-reaching intellectual luminary. As one writer says, "Rear stronger minds and they will lift up the race to sublimer heights of dignity and power."

But this great desideratum cannot be perfected so long as man will defy the natural laws of God by send-

---

\*See Chapters 6 & 7.



ing streams of liquid poison through the delicate organism with which he has been endowed.

The great and noble ambition of our race at the present day is for the development of the mental faculties, and their adaptation to a refined life. The first step in elevating mental power is that of cultivating and improving bodily constitution and bringing the race up to a higher physical organization which will develop stronger minds, and secondly, to cultivate whatever intellect there is, high or low, to a more elevated plane.

To-day there is no greater drawback to the development of mind and thought, the fountain heads of virtue, power and influence for good than the effects of alcoholic beverages as depicted from a physiological standpoint in this and former articles of this series.

Alcohol, acting as a powerful narcotic poison, passes quickly from the stomach into the blood and necessarily produces direct, speedy and disastrous effects upon the brain and nervous system, blunting the mind and deadening the perceptive faculties. The nerves being thus injured the muscles must per force become impaired.

As alcohol lessens contractile power it enfeebles and renders muscular tone uncertain. So the drinker, from his first glass, commences his journey down the toboggan slide, going faster and faster until he reaches the final plunge.

Again, how different is the appetite for food under God's wise physical laws, from that for intoxicating drinks, instigated by the devil and cultivated through the influence of his legalized emissaries.



When nature demands food we eat, and the demand is satisfied for the time being until hunger again sends out its call in answer to the natural necessities of the system; and so on and on with no increased desire from past indulgencies. And so it is with God's pure beverage to man, cold water, and thus life is sustained and prolonged.

Not so with intoxicating beverages which God has never placed in the list of natural necessities, but we drink to-day, and the morrow comes with increased desire, an artificial craving, and the yielding to that unnatural demand carries a hundred thousand victims down to drunkard's graves and a drunkard's eternity every year in this country.

Why is it that these evil results are so sure to follow and all that is good in human nature becomes so dwarfed and demoralized? It is because this narcotic poison throws the whole physical organism into a diseased condition, more or less permanent according to the continuation or application of the noxious influence.

Nearly all the component parts of the body under these conditions lack firmness and tonicity and their resisting power is diminished, and that for self-repair which nature has so wisely ordered becomes less and less under the strain so that the healing of wounds, for instance, sometimes even of slight moment, and diseases to which flesh is heir, are hard to manage and slow to recovery, if that blessed state be reached at all; beside, many diseases, as formerly narrated, are induced and human existence untimely curtailed.

We have ample proof that the dread disease, pulmonary consumption, as shown by statistics, run

through to a fatal termination more rapidly with those who have been addicted to the use of alcoholic spirits, just in proportion to the amount consumed and the time of its continuance.

Various cases of death which are accredited to different maladies or ailments are, as medical men often know, traceable to alcohol, which has prepared or brought the system into a state susceptible to the attack and development of disease, which would not have occurred, or if it did, would not, as a rule, have been fatal.

Insanity is one of the common and fearful results of alcoholic indulgencies, amounting to 40 per cent of the great list of lunacy cases on record.

Could intoxicating drinks be banished from the land, much of disease, pauperism and crime would be averted, and then too what a falling off there would be in the commitments of our alms houses, prisons and asylums!

Read some of the testimonies that are thundered down from high sources against alcoholic indulgencies in connection with crime.

Mr. Clay, Chaplain of the Preston House of Correction (England), said: "I have heard more than 15,000 persons declare that the enticements of the ale and beer houses had been their ruin."

Chief Baron Kelly said two-thirds of the crimes which came before the courts of law were occasioned chiefly by intemperance.

Judge Coleridge has said that there was scarcely a crime before him that was not directly or indirectly caused by strong drink.

Judge Hawkins has told us that if all the cases appearing upon the court calendars of England were taken, it would be found that 75 per cent. of the crimes were directly or indirectly traceable to the inordinate use of liquor.

Our own Judge Noah Davis said that intemperance stands out the "unapproachable chief among all the causes of crime," that more than twenty-five years on the judicial bench warranted him in the belief that three-fourths of the crime and seven-eighths of the poverty and distress in our country are the direct or indirect results of the liquor traffic.

Dr. Elisha Harris, for many years the Inspector of Prisons in New York State, asserted that more than half the convictions for crime in the state could justly be charged to alcoholic drink.

We are told that of 115,000 prisoners visited in different prisons, 105,000 were there through strong drink.

Hon. A. B. Richmond, a noted member of the Pennsylvania bar, high up in the legal profession, with more than thirty years' experience in the courts, said he had been engaged in nearly 4,000 criminal cases, "and," said he, "on mature reflection I am satisfied that over 3,000 of those cases have originated from drunkenness alone, and I believe that a great portion of the remainder could be traced either directly or indirectly to this great source of crime. In fifty-six cases of homicide forty-three have been caused by the maddening influence of strong drink."

These are but a tithe from the long list of just such records that could be quoted.

Much has been said and written of heredity which plays a very decided part in the downward tendencies of our race. Statistics reveal unmistakeable proof of the researches of scientists, founded upon careful study and comparison, that heredity molds and changes our external configuration and our internal structure, affects our proneness to or freedom from predisposition to disease, fashions our virtues and vices and greatly determines our longevity.

Darwin, in his writings, in speaking of our mental and moral structure, says : "They are the direct outcome of preceding generations, and we, the living generations, are like the living fringe of the coral reef, resting on an extinct basis formed by our forefathers, and shall in our turn form a basis for our descendants."

How careful we should be in the care of our own moral and physical proclivities, that we may not transmit to posterity diseased habits or constitutional defilements. As we inherit from our progenitors, features, habits, disposition and many peculiar traits of character, including virtues and vices, it is simply in the direct line of heredity that we should hand down our cultivated appetites for alcoholic drinks with their depleting influences upon the health, mind and morals, in which no other agent is more destructive in its primary or remote influences.

Dr. Norman Kerr says : "But the distressing aspect of heredity of alcohol is the transmitted drink curse. This is no dream of an enthusiast, but the result of a natural law."

The mind is very dependent upon the body ; without a healthy body, the mind, to a greater or less extent

is weakened. To be delicate and whimsical is no longer tolerated as an element of sweetness and beauty.

Vigor and strength are, in these latter days esteemed as essential elements of, and among the leading qualifications in the make-up of sturdy, mental and physical manhood. Mind and body are co-workers in the great battle of life.

To promote health of mind and body, the two must work in harmony. If the mind be disturbed from any cause the body helps, through sympathy to pay the penalty.

If the body be weakened or diseased, the mind in turn tenders its sympathy, so in either case the whole mental and physical manhood suffer together.

The terrible insidious enemy to mankind, alcohol, weakens the will power and the ability to resist temptations until at last the poison gains the mastery over the poor deluded victim, whose body limply sympathizes with the mental weakness consequent upon the injured and impaired brain power, and before he is aware of the change he is a slave, fully in the grasp of the enemy, and he is a yielding captive to the will of alcohol, with shattered reasoning powers and a failing body.

The effects of Alcohol as a narcotic poison are so manifest that, in the language of some authors, "A once thoroughly intoxicated brain never fully becomes what it was before."

The continued and free use of liquor thickens and hardens the membranous coverings or sheaths of the nerve substance, the blood vessels lose their tonicity and the whole cerebral mass becomes more or less de-

ranged, and the blood fails to supply the wanted nourishment, and the vitiation of the brain and nerve substance, the throne of thought, readily manifests itself in an enervated mind, so prominent in persons habitually accustomed to drink, and thus various diseases, not alone of the body, but in extreme cases of the brain and nervous system, such as paralysis, epilepsy, insanity, vertige, sometimes softening of the brain, impaired memory and often to delirium tremans, etc. etc. are the results.

Sir Henry Thompson, high authority, said, "The habitual use of fermented liquors, even to an extent far short of what is necessary to produce intoxication, injures the body, and diminishes the mental power."

Without a well nourished brain these maladies are prone to follow as a sequence.

Professor Carpenter in his physiology says, "Certain persons are thrown into the stage of mental weakness by a single glass of liquor."

Brain and nerve substance are largely imbued or supplied with water, which is one reason why it is so attractive to and so retentive of alcohol which has a strong affinity for it, in consequence of which the brain and nerve material are under its special destructive influence which so often leads to impairment of the mental faculties.\*

---

\*See Chapter 15.



## CHAPTER IX.

## ALCOHOL ON THE HEART.

So searching is alcohol for opportunities to attack vital and vulnerable points that it almost seems as if it were one of the devil's special agents for opening the vestibule doors for the easy ingress of his satanic majesty to demoralize the moral man while the alcohol poisons and deranges the physical man. Not one moral element in manhood can be named but some victim can be recalled in whom that principle has been destroyed by alcohol.

Not one nerve, nerve cell or blood vessel, however minute, not one organ of the body, no matter however important or unimportant, but some victim can be named for each in whom its poisonous sting has left its trade mark. Why? Because when alcohol is taken into the stomach it very quickly passes into the blood, substantially unchanged, circulates to every near and remote fiber of the body, a circuit it never performs without leaving its poisonous traces behind it to a greater or less extent.

Majenda demonstrated that in one hour after alcohol was ingested it could be distilled from the blood. Other chemico-physiological experimenters in search of latent facts, have, over and over again, found it in all the different organs, tissues and fluids of the body.

It must be evident to any honest thinker, that if the heart and blood vessels are daily subjected to this unnatural and damaging strain, day after day, week after week, and year after year, as in thousands of cases in our land, those organs must become permanently weaken-

ed and injured from the extra work which has been imposed upon them, and that the machinery of the human organism thus maltreated must of necessity wear out the sooner for it.

Daily drinks of alcohol, even to one or two draughts only, will very often produce hypertrophy of the heart and chronic enlargement of the blood vessels, the latter being so manifestly marked in the drinker's face.

Such are the conditions which so often lead to fatty degeneration. It is estimated by some of our most learned scientists that the practice above referred to, even in the most temperate class of drinkers, leads to permanent structural changes.

All know that the circulation of the blood is carried on by the action of the heart, and nothing can be more beautiful and perfect than the pulsations of that organ and the respiratory movements of the lungs, which are made to correspond and assist each other in their functional duties, and to regulate themselves to the necessities and demands for blood and air, more or less, being increased by day and lessened by night.

All the harmonious regularity is governed by a system of nerves called the *vaso motor system* which are distributed all along the walls of the blood vessels to command contraction or expansion as requirements are made.

When the face of a drinker is reddened by an increased flow of blood through the minute capillary vessels, it is a certain sign that the heart is in trouble as a result of alcohol and is working with increased rapidity.

Sometimes an extra amount of labor thrust upon the



heart is alarming, especially in cases of protracted dissipation. The heart is the busiest organ in the human body, and requires rest just as the body itself must have it, and nature has wisely provided for it, so that while the auricle upon one side contracts, the corresponding ventricle rests, or sleeps and *visè versa*, and any increase of labor put upon it produces a corresponding wearing out of the organ, as that arising from the irritating effect of alcohol. For instance, in a man of ordinary stature and health, the heart beats, as indicated by the pulsations at the wrist, 70 to 75 times per minute, or 4.200 times per hour, or 100.800 times per day, or 3.204.800 per year.

The introduction of four ounces of alcohol into the stomach will increase the pulsation about eight per minute, or 480 per hour until the effect begins to wear off.

In the average duration of life the heart pulsates 3.000.000.000 times, while each pulsation represents a force of about thirteen pounds and sends about three ounces of blood around the body at each contraction, or 200 ounces every minute or 750 pints every hour, or 8 tons every day, or 2.920 tons every year.

About one eighth of the weight of the body is blood, or  $17\frac{1}{2}$  pounds to 140.

From the experiments of Dr. Parks he found that taking the average pulsations of the heart to be 106.000 in 24 hours in a person using water only, as a drink, they were increased by the action:

of one fluid ounce of alcohol						4.300 times
"	2	"	"	"	"	8.172 "
"	4	"	"	"	"	12.960 "
"	6	"	"	"	"	18.432 "
"	8	"	"	"	"	23.904 "

And from the action of 8 fluid ounces on the following day 25.000 times. In each of the last two days when 8 ounces of alcohol was taken, the average increased work done by the heart was equal to its lifting 24 tons one foot high.

Is it any wonder then, that after a night's dissipation the drinker feels languid, weak and "used up," and his heart literally turning double somersaults? Is it any wonder that so many drinkers go out of the world suddenly? Is it not a wonder so many live as long as they do?

But this is not all, the drinker's heart is very, very liable to take on a superabundance of fat, and he to die of fatty degeneration of the organ. That is a common result of alcoholic drinking, and more especially among beer drinkers.

That beverage seems to have an especial tendency to loading the internal viscera of the human beer tubs with fat.

In health the blood contains only two to three ounces of fat to 1.000 the highest being  $8\frac{1}{4}$  to 1.000. In the drunkard or constant beer guzzler it is 117 to 1.000, forty times more in the drinker than in the abstainer. The heart is often loaded to the extent of an inch in thickness, when of course in all the interstices among the muscles are large deposits of the same.

Yet another, though less frequent result of dram drinking, is enlargement of the heart, and sometimes ossification of its valves, as I have met in some of my own autopsies.

As a sequence of this fatty deposit, a great change takes place in the power of contractility of the muscles

of the heart, the organ becoming weak and feeble, the pulse intermitting, the poor over-worked heart unable to do its required work with any degree of perfection, and when summoned to do a little more, under the stimulus of alcohol, perhaps often closes up its labors with a sudden collapse, and the poor, unfortunate, blind, besotted drinker is ushered into a drunkard's eternity, and his long-faced physician issues a death certificate of "heart failure." Yes ! It did fail.

The medical practitioner is almost daily applied to for advice in supposed heart disease. I think I am safe in saying that fully seventy-five per cent. present simply symptomatic indications of other derangements. Some are caused by indigestion, some by fermentation simply, from badly chosen diet, indulgence in too much starchy food, particularly potatoes. Many cases of supposed heart maladies are readily traced to the use of that common article of diet, the potato, some of which may be changed so the heart will soon resume its normal condition by abstaining from the use of that delicious root, without the intervention of a single drug, unless in some instances it be a mild aperient to regulate peristaltic movement.

In some cases when extensive flatulence supervenes as the result of alimentary fermentation, causing pressure against the diaphragm, thus interfering with the heart's action, often alarming the patient, it is found necessary to cut out sugar from the diet also, as that, as well as the potato, contributes bountifully to the process of fermentation and sympathetic cardiac disturbance.

By far the greater per cent. of the really marked

cases of cardiac or heart derangement, manifestly organic, are easily traced to the use of alcoholic drinks or tobacco, or to their combined influence.

When we think of the immense amount of labor that little organ, the heart, has to perform to keep the machinery of life in motion, the only wonder is, that with our reckless living we are permitted to remain on this mundane sphere half as long as we are.

The heart in general terms, is the great propelling engine of the blood through and around the body, for the necessary changes it has to undergo. In a standing posture when the heart indicates a pulsation, say of 80 per minute, it will, on an average, fall to 70 per minute when sitting and to about 65 when in a recumbent posture.

When alcohol is taken into the system as I have formerly indicated, it greatly accelerates the heart's action. Why so? simply because the alcohol produces a semi-paralyzing effect upon the *vaso motor* nerve system, thus lessening the muscular hold over the small arteries, and failing to keep them properly contracted, thereby diminishing the power necessary to force the blood through them, consequently the heart contracts more quickly because the loss of the contractile force gives it less to oppose.

Again, the heart has its own specially provided nerves to control and regulate its movements, which lose their power just in the same way that the *vaso motors* do, which cause the heart to labor more and accomplish less. The *vaso motor* nerve system is composed of those little, delicate nerve fibers that have their origin in the medulla oblongata, or head of the spinal marrow,

and produce a motion of contraction or dilatation in the walls of the blood vessels.

During all these changes through the operation of alcoholics the blood vessels become softened and weakened, which accounts for the occasional cases of apoplexy in drunkards from rupture of these tubes in the brain.

Of course the greater the quantity of alcohol taken into the system the greater is the increase of heart's action. If the heart pulsates 100,000 times in twenty-four hours, then any drink surcharged with one ounce of alcohol will cause an increase of 4,000 in the same length of time, and so on up.

Thus we see the utter waste of muscular force expended, to the general deterioration of the physical mechanism, which nature has provided should be husbanded for every-day calls which she is required to demand for the perfect preservation of the body.

After this extra strain imposed upon the heart has passed off, the heart flags as if fatigued and its pulsations fall below its normal condition at the time the alcohol was taken into the system, more or less, according to the quantity introduced, consequently the whole system suffers from its inability to fully perform its natural functional duties.

The great scientist Richardson has said 'alcohol deranges the constitution of the blood ; unduly excites the heart and respiration ; paralyzes the minute blood vessels, etc.," verifying the above theory, while Sir Henry Thompson, M. D., another scientist, says : "I find it to be an agent that gives no strength ; that reduces the tone of the blood vessels and heart ; that re-

duces nervous powers, etc." Scores of others could be quoted in support of the same facts.

Tobacco, too, is a virulent heart deprement, acting upon that organ much in the way of alcohol in its general results, *i. e.*, the pulsations are quickened, the force weakened and power lessened. Like alcohol, tobacco paralyzes the over-taxed nerves until they are half deadened by its poison, nicotine, often causing severe pain around the heart.

There is sufficient nicotine in one common cigar if extracted and administered singly in a pure state to kill two men. One drop of it applied to the tongue of a dog will cause the death of the animal.

Yet cigarettes are more destructive in their effects than cigars. Boys in the growing time of life are permanently injured by them, in that their poisonous results are manifest in dwarfed intellect, weakened heart, with enfeebled muscles and shattered nerves, checked growth, enervated will power, with trembling heart and limbs, all of which are becoming every day occurrences among cigarette smoking lads.

For these delicate dainties, the cigar product of last year, 1900, the internal revenue receipts amounted to the nice little sum of \$19,785,481.60; on cigarette, \$3,969,191.30.

Could all the cigars of one year's manufacture in this country be placed in 322 paralld lines, end to end, side by side, they would cover a walk 16 feet, 8 inches wide from New York city to Chicago. Could they be placed in 100 parallel lines in the same manner they would make a belt more than five feet wide from Buffalo, N. Y., to San Francisco, Cal.



*Morally Considered.*—When man panders to appetites and passions, his physical and intellectual powers suffer together ; they are hand-maidens in the downward tendencies of his moral manhood. In these intemperate, unhealthful, demoralizing and damaging practices, man throws the lie in the face of his reason, denies the evidences of his senses and discards the injunctions of his conscience. He defies nature and the laws of God and attempts to thwart them by reversing the rules of life laid down for a healthful living. As well might he expect to prosper in business enterprises by always using the multiplication table backwards.

Some give way to evil practices though they see the disastrous consequences staring them in the face, while others commit the same errors because they are too morally blind to see the coming of the fatal result.

Man given over to appetites and passions looks downward and his whole history can be summed up in three words : Birth, Sensation, Death.\*



## CHAPTER X.

### ALCOHOL ON THE LUNGS.

Phthisis pulmonalis, or pulmonary tuberculosis, pulmonary consumption, is characterized by morbid products denominated tubercles, known in medical parlance as tuberculosis. Not alone in the lungs do we

---

\*SEE CHAPTERS 37 & 38.

find this degenerating process taking place in the animal economy, but in the liver, spleen, kidneys, etc., etc., but that of the lungs only will be considered in this article.

We meet with two varieties of pulmonary tubercles, the gray and the yellow, the first located in the interstitial tissue outside the air cells, very small ; in autopsies sometimes found so minute as to be almost undiscernible with the naked eye, requiring the microscope, but they are generally about the size of millet seeds.

The yellow variety is a sort of exudation within the air cells in small isolated round masses, sometimes accumulating into little clusters. At length they become softened into a thickened mass, resembling pus, leading on, not infrequently, to the formation of abscess, often breaking through the bronchial tubes, destroying what lung structure it happens to include.

That the disease can be conveyed from man to inferior animals by inoculating little portions of the tubercular exudations under the skin was discovered by a French physician in 1865, who found on killing the animals in two or three months' subsequent to inoculation, that their lungs were manifestly diseased.

Did space permit, a tracing of the progress of the malady would be interesting, yet its terrible results are known to the general reader. Unless Koch's late discovery should prove a panacea, I can emblazen no infallible specific for thwarting its ravages, as I am aware of no unfailing agent for the removal of tuberculous cachexia, yet nature may be so assisted as to hold the disease in check, often for a long period of time, by heroic restrictions.



I have little faith in drug treatment, in the main, in this malady. Because you have heard of cod liver oil, malt, ale, stout, chlorate of potash, fusil oil, bitter infusions, hypophosphites, rum, whisky, etc., etc., do not attempt to treat your own case, nor listen to empirical suggestions from those who "have known so many just such cases cured," for such treatment often fans the latent spark into an untimely blaze.

It is quite as important to ascertain what not to do as to acquaint one's self with just what *to* do.

Then seek an early diagnosis from a skilled physician and follow the advice he gives.

Some think cod liver oil and whisky constitute the sheet anchor of hope in such cases, and that they may as well save the medical man's fee and invest it in those remedies. No one could be guilty of a greater mistake. In that way, a wide open door has frequently been left for the ingress of the angel of death in premature visitations.

Of course your M. D. will tell you that you should take highly nourishing diet, as milk, cream, eggs, beef, lamb, etc., together with outdoor air and exercise as much as possible, and be warmly clothed with silk, woolen, furs, etc.

If it be true that alcoholics are ever of any real benefit in this dreadful disease they are nevertheless dangerous playthings and should not in any event be indulged in except under the specific direction of a well-educated physician, who would not, under any circumstances, recommend that line of treatment to any one who was addicted to their use, as he would know full well that an amount which would be required to

combat the disease in such a constitution would shipwreck the patient without reaching the disorder.

Simple as that remedy may seem to the ordinary observer, it is nevertheless a dangerous implement in the hands of the unskilled and should under no circumstances be tampered with except under the directions of a competent medical adviser.

Again, the popular prejudice has made this class of afflicted ones particularly fearful of cool or cold air. High hills or mountain tops are the best localities, with something, business if possible, to interest and occupy the mind. Mind has a wonderful influence over disease. The cheerful, buoyant disposition often robs the grave for many years. Exercise should not be carried to the extent of fatigue or exhaustion.

We gather from statistics that in a population of two hundred and thirty millions in France, Germany, Russia and England, the annual deaths from consumption are about eight hundred and seventy thousands, and that in the nine hundred and sixty-eight millions inhabiting the globe three millions are called hence in each year by this dread malady.

How preposterous the idea that to fatten the lungs and throw off or modify this disease alcoholics are indicated. The fat thus created by that agency is disease, degeneration. It has been clearly demonstrated that even small doses of alcohol will cause little globules of fat to float in the blood; effete matter.

Beer, for instance, taken three or four times a day will increase bodily weight, the lungs taking a proportionate share; not from nutrition, but from its power to retard the throwing off the natural waste of the

body, thus retaining the old worn-out atoms in the form of fatty degeneration, which embarrasses the tissues of the organs, lungs included, and weakens their functional powers.

Is it reasonable to suppose that such physiological action will eradicate or prevent the formation of tubercles? It is said that an ordinary bottle of weak French wine will keep the lungs at work eight hours to get rid of it.

When alcoholics are taken into the system the lungs always have an extra amount of labor to perform in the process of oxidation, thus they are weakened instead of being strengthened.

Again it does not seem that God has set apart any favored spot on this mundane sphere as a panacea for consumptives. As already suggested, high ground is preferable to low, if the atmosphere be uniform and dry, yet we find now and then an exception to that rule. In the main, a uniform, dry cold atmosphere like Minnesota or Colorado, yields the best results.

On the whole we find it quite as difficult to select a locality where the patient will not be likely to suffer by the change, as to decide where the probabilities are in his favor, for it must be admitted that with those who make a trial of changing climate, vastly the greater number do not find the expected relief, and an eradication of the disease is found in a very small minority only.

While I would in each confirmed case ask whether it were not really better to die at home among friends, than in a strange land isolated from home comforts, I would not dissuade any one desirous of making the trial, in consideration of the fact that a change of

climate does often give the patient temporary relief and comfort and retards the progress of the disease, thereby prolonging life; although the final result may be the same in either case.

In years gone by I have known not a few of these afflicted mortals very greatly benefited by a sojourn to Florida, to California, to Cuba and many other places of resort for invalids, whereas to-day the same grade of patients in a vast majority fail to find the anticipated relief in the same places, and many, many only reach their longed for land of recovery to find themselves drooping and soon ready to die.

One great reason was, the journey used to be a leisure one, so the patient began from the first day to meet with a slow change, giving time for the system to accommodate itself to circumstances and surroundings and he often found himself much improved before reaching his destination, whereas to-day he is hurried off in a palace steamer or a rapid railway train, rushing from one extreme to another and tired nature is so surprised that she yields to the sudden change and the poor sufferer dies almost before his time.



## CHAPTER XI.

### ALCOHOL ON THE LIVER.

The liver is a compact gland of large size performing a double office, first that of separating the impurities from the venous blood of some of the viscera, and

second that of secreting bile so indispensable in the process of digestion.

It is the largest gland in the human body and the seat of some of the most important functions of animal life. It is about three inches thick, six inches wide and twelve inches long and its normal weight is from three to four pounds.

It is located high up beneath the lower ribs, mainly upon the right side, in the abdomen and near the stomach. It is classified into two large divisions, the right and the left lobes, and those into the sub-divisions or lobules, etc.

It is supplied with a great net-work of blood vessels, nerves little bile ducts and absorbent vessels. It is a body peculiarly unlike any others of the viscera of the human organism in its anatomical structure and its pathological offices, and the functions which it is daily called upon to perform are more complex than those of any other glandular body in the human mechanism, and when deranged the whole physical machinery is thrown out of harmony into discord.

When alcohol is taken into the stomach it soon finds its way to the liver and at once commences its injurious effects upon it.

The liver seems to act the part of a faithful and trusty sentinel, by grasping, or absorbing much of the alcoholic poison which is received into the stomach and arresting it in its passage to other organs. Consequently from continued trespass and abuse upon its kindly office it becomes impaired and abnormally changed, often followed by fatty degeneration and enlargement of its whole structure. It being so closely

and intimately connected with the stomach, and consequently absorbing from it a vast amount of liquid, explains the reason of its becoming functionally deranged when among those liquids alcohol intrudes itself into its good graces, actually changing the substance of the organs through which it passes.

It is an incontrovertible physiological fact that alcohol changes the anatomical constituents of the liver, increasing the number of bile ducts as well as their size, and finally tacking about and obstructing them until disorganization of the entire glandular structure supervenes. This is particularly so with wine and beer drinkers.

Thus we see the stomach is not alone engaged in the process of digestion but that the aid of other organs is requisite for its completion.

Thus it is readily shown that the liver plays no inconsiderable part in the preparation of the nutritive portion of the blood for its utilization throughout the system, or at least in furnishing one of the necessary ingredients for its consumation, bile, which should not be poisoned with alcohol, and it is very apparent that the functional duties cannot be properly performed by deranged organisms.

Yet how many are the stupid simpletons who claim they must have beer, ale, wine, stout, or brandy to help the poor, weak stomach in its work, and to stimulate the liver in its torpor, to more lively action, consequently it does take on a little activity and hastens the victim to his final end. How deluded.

Alcohol is just about as necessary and comforting under those circumstances as pneumonia is to the com-



fort and longevity of a colony of wild monkeys. In many respects the liver receives the same damaging effects from alcohol that I have demonstrated as taking place in the drunkard's stomach, viz., irritation, inflammation, degeneracy of the tissues. weakening and distention of its blood vessels, etc., etc.

One of the first results, however, is the change in the color of its secretion from a bright yellow to green, and sometimes almost to inky black, and occasionally thickened almost to the consistency of tar, often resulting in the formation of gall stones (biliary calculi).

While, as I have formerly indicated that the contact of alcohol with albumen hardens it, here we find that its contact with the biliary secretion of the liver hardens that also, the change converting it into dead matter.

During these changes, which by the way are more pronounced in the daily tippler than those who have their periodical sprees, then break off into intervals of abstemiousness, the drinker receives little or no warning of the danger ahead until nearly or quite too late.

In the same class, too, we frequently meet hypertrophy, or enlargement of the organ. That is one of the common results of dram drinking, increasing the ordinary size and weight of the gland from three or four pounds to double, treble or quadruple that of its normal condition. The writer once saw a specimen which weighed thirteen pounds. During all this change the structure of the organ is constantly undergoing disorganization, or breaking down and becoming softened, while under some other changes it becomes hardened.



In some countries poultry dealers macerate the food for their fowls in alcoholic spirit in order to bring about this diseased change, thereby producing, in some instances, enormous sized livers, which command large prices in the markets as palate ticklers for epicures.

Like some other maladies this disease of the liver has increased alarmingly since beer became so generally used as a beverage among the drinking classes.

I think it quite within bounds when we estimate that the number of cases have increased seventy per cent. since the use of beer has become widespread.

Indeed, it is the exception to find a case in any but drinkers of intoxicating beverages. As I have indicated the change goes on so gradually the poor deluded drinker often imagines he is actually taking a new lease of life.

One writer says, "Let no toper flatter himself that when he has snored out his drunken sleep, and even paid his next day's headache, he has discharged his last score of penal debt to the laws of an outraged organism."

Beer and porter drinkers seldom reach an advanced age; they drink with the deluded idea that they are being benefitted by it, growing corpulent and healthy.

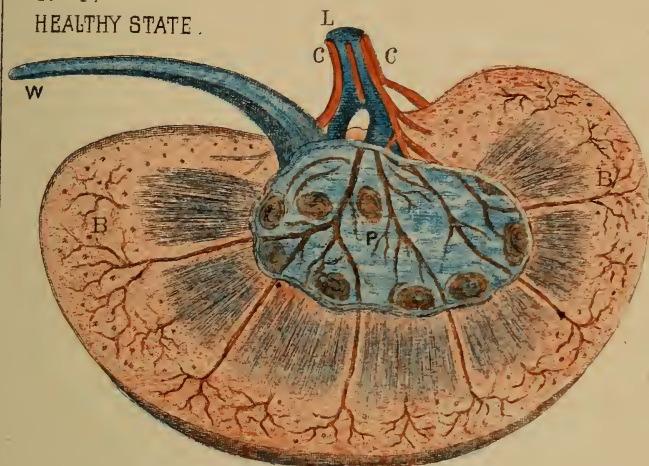
These drinks are about as necessary to get good health as a licensed saloon is to the morals of a community or small-pox to the success of a camp meeting.

It is a recorded physiological fact that almost all, even moderate drinkers, are carrying with them, more or less enlarged and softened livers. These changes come on so gradually and painlessly that the afflicted drinker does not realize that anything wrong is taking place.

# THE KIDNEYS.

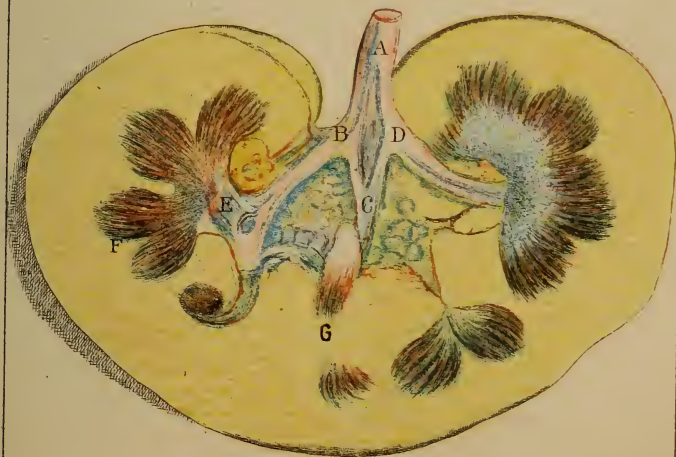
N<sup>o</sup> 1.

HEALTHY STATE.



N<sup>o</sup> 2.

DISEASED FROM INTemperance.





Often the first warning is of so serious a nature that the patient learns from his medical adviser that nothing but palliative remedies will be of use to him, as the day for curative measures has passed, while he was tipping in the serenity of supposed health, but really about as safe as a powder house struck by lightning.



## CHAPTER XII.

### ALCOHOL ON THE KIDNEYS.

It requires no argument to convince any sane man that the kidneys are among the most delicate organs in the human body. They are highly organized and yet have to act the part of scavengers for the human economy. It is seldom indeed that the kidneys of a drunkard or an habitual drinker are found in a healthy condition.

These organs are prone to derangement and disease in all persons, but as in the case of the liver, vastly more so with those who indulge in alcoholic drinks, and as previously noted their diseases are greatly on the increase among ale and beer drinkers.

The functions of the kidneys are peculiar, delicate and of vital importance to the prolongation of life. They are really the highest grade of filters in their functional office, removing from the blood by their excretory powers, the watery and nitrogenous portions with which it is laden, in the form of urea.

They are abundantly supplied with blood vessels, thus they are never in want of material upon which to

work. This beautiful mechanism, with its great functional duties and responsibilities is, under the most favorable circumstances, burdened to its fullest capacity.

Now add to it the necessity of eliminating from the blood, the alcohol that the silly toper pours into his stomach from day to day, who can longer wonder that so many drinkers are ushered into eternity with contracted, degenerated, granulated, fatty, enlarged, softened, broken down kidneys, (Bright's Disease) Diabetes and a great net-work of ramified ailments consequent upon it.

In cases where the kidneys become thoroughly and chronically diseased, the recoveries among them constitute but a fractional per cent.

Bright's disease is more prevalent among males than females for the simple reason that the former indulge more in still-house slops than the latter do.

Again the very great majority of cases are found among drinkers of ardent spirits. Those beverages act as irritants and diuretics and greatly increase the burdens of those little organs.

When over worked for a protracted period, they become functionally deranged and utterly unable to perform their delicate and intricate offices properly, when disease steps in and takes possession of them, and sooner or later relieves them of the burden which has been so ruthlessly and wickedly thrust upon them.

Rheumatism and rheumatic gout often arise from the half worn out condition of the kidneys from their long continued subjection to stimulating or irritating abuse, being unable longer to eliminate the morbid matters from the system thus they are permitted to remain

and act as diffusible poisons, and the toper limps and groans as one of the penalties for his trespass upon his own body, that beautifully furnished house which God gave him for the indwelling of the spirit.

God's laws are certain and cannot be trespassed upon without producing a penalty.

Some of our most noted scientists, as Dr. Carpenter, Dr. Christison, etc. bear testimony to the fact that three fourths of the kidney diseases, yes, *three-fourths* thoughtfully spoken, are found in drunkards, or habitual drinkers.

All honest and learned scientists will admit that alcohol produces a high degree of irritation in the kidneys, which if prolonged, leads to inflammation, thence to a change in their structure, tending to the worst forms of renal disease.

Alcohol is about as necessary to one's health and longevity as a practical knowledge of pool-playing and gambling is to a successful preacher.



## CHAPTER XIII.

### ALCOHOL ON THE BLOOD.

Every living animal body is supplied with a little furnace of his own for generating the necessary heat for its existence. To illustrate crudely the circulatory system, let me ask you to imagine that you have two of the most thickly or well-filled branches from a fir or a pine tree, the butt or large end of one being placed over the left side of the heart to represent the arteries,



and the other in like manner over the right side to represent the veins. Now suppose you have them so nicely adjusted that all the little twigs or needles of the two branches just come together, point to point. The blood starting through the arteries from the heart, loaded with oxygen, which soon receives the nutritive portion of food from a little duct, which is constantly being given out where the little hair-like ramifications (twigs) come together to form the junction of the arteries and veins where the latter take the blood from the former, which has become loaded with impurities along its way, and carry it back to the right side of the heart, thence to the lungs to throw off the gathered-up impurities along its way, and receive a new supply of oxygen from the air inhaled, for another round. The heat of the body is generated at the junction of these small hair-like arteries and veins called capillaries, by the union of the oxygen in the blood and the carbon deposited from the nutriment of food at those points, which keeps up a constant spontaneous combustion. This is a beautiful process of nature carried on unerringly when not interfered with by some intruder, as alcohol, for instance.

These little capillary blood tubes are so infinitesimally small that to see them requires a strong magnifier, and so numerous and closely interwoven are they that they form a complete net-work all through the body, so minutely that the point of a pin wounds a number of them when inserted into the skin. The vascular system including these little capillaries, could they be straightened out into one line, those in an ordinary sized man would reach 14,000 miles. The blood is composed of a yellowish-like liquid called plasma, in



which are floating innumerable little corpuscles or blood globules like the butter globules in the milk, of a very high red color, only about the three-thousandths of an inch in diameter, so small that an ordinary pin hole would be 10,000 times larger than one of them, and yet they perform some of the most important functions in the economy of life and manifest marked disturbance whenever they are enroached upon, as in the case of a liquor drinker, when they become distorted into all sorts of irregular shapes, and are partially deprived of their bright red color ; and they are stimulated to an unnatural contraction, rendering them less capable of absorbing oxygen and throwing off carbon.

This contracting process, together with the debility produced upon the capillaries by the partial paralysis of the little nerve fibers accompanying them, cause much unnatural distention, so that an undue amount of the globules are forced through them, often leading to damaged health and loss of life.

Were alcohol a food it would nourish and support these little messengers of life instead of poisoning them as thus indicated. To impress by recapitulation, read.

Alcohol is not food, but is a poisonous intruder, thwarting the beautiful and important designs of nature by depriving the blood corpuscles of part of their water, thus contracting their size, changing their relative arrangement, lessening their vitality and greatly diminishing their power to absorb oxygen, which is so requisite for the promotion of life and health.

So we find it a great impediment to the necessary functional office of the blood. This is particularly so in youth, the growing period of life, when cells are forming and the nutrition of the tissues in particularly

vigorous. At such times alcohol arrests growth and development.

Dog fanciers often take advantage of their knowledge of this fact by administering alcohol to young puppies, to arrest growth and development, so as to raise them to mature age in puppy size.

Of all persons the young should abstain from alcoholics.

Alcohol, having a strong affinity for water, seeks it vigorously whenever it comes in juxtaposition with it, and absorbs or sponges up a percentage of it, which in the human body, is readily absorbed by the veins of the alimentary surface, or, in other words, passes readily through the walls of those venous vessels by the process of endosmosis, or straining through membrane, called as above, absorption.

Through this medium and that of the portal system (*via* the liver), it becomes very largely diffused through the entire body by means of the venous and arterial system.

In its natural state, alcohol, though brought in close contact with a blood vessel, will not find its way through into the blood until first becoming diluted with water.

So, after its introduction into the stomach, it at once commences its trespassing and damaging effect upon the internal viscera and their functions, by robbing them of their watery constituents until it becomes sufficiently diluted to leap through or become absorbed into the blood within the vessels indicated.

Now it is in position to commence its poisoning and damaging effects by producing very important physical

changes in the different structures and organs with which it comes in contact.

Having become diffused with the water of the blood it is in condition to pass to every pin's point of the body, and not one fibre thus visited escapes its damaging effects to a greater or less extent.

Its first action is upon the different constituents of the blood with which it is now so freely mingled, first upon the fibrine, which is that substance which forms a clot in blood when drawn and exposed to the air, second upon the albumen, third upon the salts, fourth upon the fatty matters and lastly in a most pernicious manner upon the myriads of little blood disks or globules, distorting them into shapeless masses, thus deranging the whole circulatory system before it even has time to make its dastardly attack upon the different viscera of the body.

Sometimes its effect upon these little blood corpuscles is that they are drawn together and adhered to each other as if by inflammation, into little rolls or chains, often producing very serious results by their being less able to pass easily through the minute vessels of the lungs and capillary circulatory system thus impeding the blood current and producing local injuries.

In this way alcohol becomes an enemy and a blood poisoner while the stupid guzzler is unaware of the mischief that is going on within him until oft times his body is a citadel of diseased members.

Nature has wisely arranged our circulatory system for the preservation and prolongation of life, and we have no right to trespass upon its beautiful mechanism and impede its delicate and astonishingly perfected functional organism.

The arteries which branch out from the heart, laden with a full supply of newly oxygenated blood, the re-vivifying current of the system, and spread out so beautifully all over the body, terminating in fine tissue or web-like branches, which, at their extremities unite with the veins for the return of the blood to the heart and lungs after having distributed its reanimating elixir of life, are performing too important and sacred a line of functional duties to allow such an enemy, such an intruder as alcohol to step in and interfere with some of God's most wisely directed plans without manifest injury as a result.

These little arteries terminate in such delicate ramifications that they are termed arterioles, and are so minute they will only allow a blood corpuscle the three thousandth of an inch in diameter to pass through them, having a most wisely arranged power of contraction by which the passage of blood through them is controlled or regulated in response to the contractions of the heart.

It is very easy to understand how these functional duties can be interfered with, especially in the harmonious workings that nature calls for between them and the great circulatory fountain head, the heart.

For instance, some substances when taken into the blood will increase the contractility of the little vessels while others will weaken it.

Alcohol is one of the latter class, and when these little vessels become weakened by it, the whole system is deranged and the drinker's red face and body indicate the presence of the intruder. By various experiments it has been clearly demonstrated that alcohol also paralyzes the minute vessels, thus robbing them of their contractile force, when a superabundance of

blood is allowed to flow through them for the want of the natural nervo-muscular control.

When a railway train has gotten on too much power, or momentum the air brakes are applied to help to regulate it. So the heart's action is held in check by the contractile force of the blood vessels (the air brakes) but when robbed of that power there is danger of having a runaway engine in the body some day.

No experiments have yet proven that alcohol has ever assisted in the natural reparation of the waste in the tissues of the body, acting with or in any way supplying the place of any recognized food. No proof has ever been established that alcohol has increased physical strength or mental activity, enabling the drinker to accomplish more or better mental or manual labor. Why? Because when taken into the stomach it is absorbed into the blood, undergoing no digestive change, never in any way becoming assimilated, under which circumstances it could not yield any constituent principle for the sustenance of any of the structures of the body.

The hosts of scrutinizing scientists, with their carefully studied experiments for more than half a century past, have failed to discover any element in alcohol by oxidation or transformation that is in any way a builder up or supporter of tissue, but quite the reverse has been clearly demonstrated.

Dr. N. S. Davis in speaking of the experiments of Dr. Boeker and some of his own which have been repeated by other scientists in Europe and America, makes the following pertinent statement: "So nearly uniform have been the results of direct experiments that they fully establish the fact that when alcoholic

liquids are taken into the stomach or otherwise administered, the alcohol is rapidly absorbed into the blood, circulates through all the tissues of the body and may be detected in the form of alcohol, both in the blood and in structures of the various organs, and while thus present, it diminishes temperature, nerve sensibility, muscular action, and both molecular movements and excretory eliminations, thus constituting it a true anaesthetic and organic sedative." It may seem strange at first thought that alcohol depresses temperature even when surrounded by cooling influences and does not assist the body in bearing a high temperature. For instance, workmen engaged in glass works and iron foundries are fully aware that they must not use alcoholic beverages when at their work.

So with stokers in the holds of steamships on the Red Sea, who are exposed to the intense heat. They are fully cognizant that the use of alcoholic drinks would be destructive to them, as they confine themselves almost strictly to oatmeal and water. Indeed, alcohol is more destructive in its effects in high temperatures than even in low, for the simple reason that respiration is less active in high than in low temperatures, consequently the alcohol remains longer in the blood, thus giving more time for its damaging work.

In hot climates people must be extremely careful about alcoholic indulgencies, particularly soldiers on long marches, when Sir Charles Napier, in an address to a regiment of British soldiers in Calcutta, said: "Let me give you a bit of advice, don't drink," he spoke wisely and well. He said: "Let me tell you that you have come to a country where, if you drink you are dead men. Be sober and steady and you'll



get well; but if you drink you are done for." The peculiar and diversified moral effects upon the brain are often alarming and yet at times very amusing. Ordinarily truthful men are sometimes the most inveterate liars when excited by alcohol.

Dr. Monroe of London tells a laughable incident on this very point of an acquaintance, ordinary upright and truthful, but on a drinking spree fell in with a young man who had served in the Crimean war, and this gentleman, who had never been out of England, gave such a thrilling account of *his own* suffering in one of the battles that when almost dead from bayonet wounds of the Russians, a brave companion carried him off the field. The young stranger was so excited, the doctor says, that "he seized the gentleman's hand and, when sobs choked his voice, exclaimed: 'Are you ———, the man I saved? Here? Alive, whom I thought was dead? Give me your hand—I'm overjoyed! How wonderful to meet here to-night! Waiter, bring in another bottle of wine.'"\*



## CHAPTER XIV.

### A TRANSPARENT BODY.

Were the human body transparent, and so arranged that we could look into, and see the workings of the different organs, as we look in upon the machinery of a watch and view its movements, we would readily

---

\*See Chapter 31.



see, without inquiry, why alcohol is such a deadly foe to human health and so often a destroyer of life.

We should see that whenever alcoholics are taken into the system, nature's perfect movements are deranged, their harmony interfered with, the heart's action unduly increased, the nerves, brain, stomach, liver, kidneys, spleen, muscles and tissues poisoned and diseased.

We should have an ocular demonstration that alcohol is a poison which irritates, disturbs and throws out of accord *all* the internal viscera of the human body, retarding digestion, weakening the blood vessels, tissues and muscles, irritating the nerves and brain, and producing discord throughout the entire system, thus opening wide the door and inviting in as guests, disease and death.

We should see in the drinker the beautiful surface of the inner membrane of the stomach gradually changing from its soft, pinkish-yellow color to a blushing crimson. We should see myriads of little distended blood vessels, where we at first saw none, because before they were disturbed by the alcohol they were too minute to be distinguished by the naked eye.

We should see livid spots, thin ulcers appear upon its surface, all from the touch of alcohol.

We should see the fine beautiful nerves become loaded with little bulbs or nodules, as if tied into knots because of the hardening of the albumen of their composition.

We should see the heart laboring with increased action to hurry along the intruder, alcohol, that it might be pitched out of door.

We should see the little bundles of diseased fatty deposits appearing along many of the organs.

We should see the brain irritated and reddened, and its little blood vessels distended abnormally.

We should see the lungs, the liver, the kidneys, the spleen gradually taking on disease, all from the poisoning influence of the deadly guest invited into the house of perfection by the drinker.

We should see all these dreaded changes taking place in the moderate drinker as well as in the confirmed drunkard, and thereby be made to realize why so many are dethroned of reason, why so many die prematurely, and why we should do all in our power to eradicate the evil.

The occasional or moderate drinker of to-day is surely producing a physiological change in his system that will, unless checked in time, become an unconquerable foe, stealing upon him so gradually that he, like the victim in the story of the Laocoon, will find himself embraced in the deadly coils before he is aware of his danger.

While it increases the action of the heart it unduly quickens the circulation of the blood, at first producing a pleasureable effect, but constantly undermining his nervous energy, until by-and-by he will fall an easy prey to disease.

It is a settled fact, demonstrated by scientific observation that while the drinking of alcoholics is the direct cause of death to an alarming extent, it is vastly more destructive in its indirect results by increasing the fatality of numberless diseases to which flesh is heir.

The arousing of nature's energies beyond a healthy

action, mistaken by the drinker for increased strength, is simply opening the vestibule door to future misery and punishment.

The alcohol he thinks he is using in such moderation will teach him a bitter lesson in the future unless he banish it *into to*, and he will find it a wily intruder and deadly trespasser upon the beautiful structure God has given him, in His own image and called it man.



## CHAPTER XV.

### HEREDITY OF INEBRIETY.

This subject has for years attracted the closest observation by our leading scientists, in private practice, in asylums and hospitals.

That inebriety is a distinct form of disease is a settled principle in medicine and cannot be successfully gainsaid, and nearly the whole medical fraternity has cometo look upon and treat it as such.

It is manifested differently in different individuals ; in some being furiously aroused at intervals, while in others it is continuous, constantly harrowing the cerebral and nervous sensibilities.

In a drinker of alcoholic stimulants, not a blood vessel, however minute, not a nerve or nerve cell, or any portion of the brain escapes the destroying influence of the narcotic poison.

No child that comes into the world with unsound

mind, brain and nerve tissues, and impaired blood is inheriting that which God first ordained should be.

While the heredity of the disease is questioned by some on the theory that it is not a natural, but an acquired one, the greatest weight of medical testimony is recorded in unmistakable language, that it is hereditary, founded upon close and extended observation and that it is handed down through two or three generations.

If the law of heredity is that like produces like in reproduction, is not a disease produced by the poisonous action of alcohol upon the nerve centers, the blood &c., likely to be reproduced in the offspring?

Does not the embryo take from the diseased organism the sting of their diseased conditions?

The disease of inebriety is transmitted by heredity from one generation to another, from parent to child, in accordance with the same law that governs any other constitutional taint, as tubercular consumption, cancer, scrofula etc, which are entailed upon posterity.

Inebriety sometimes passes over one entire generation without leaving a foot print of its existence, then asserts itself in the third, often with the peculiarity that the victim craves the same kind of intoxicant that his dissipated grandfather used to imbibe.

It is idle to urge that the disease of intemperance is not hereditary, is not handed down from parent to child.

I have been too close an observer along these lines in more than thirty years of medical practice not to have discovered, that weakness, defective mental powers, enfeebled development and even imbecility are often unmistakably transmitted from drinking parents to offspring.

Medical practitioners are almost in constant contact with alcoholic phthisis, alcoholic reumatism, alcoholic gout, contracted liver, contracted kidney, inflicted upon the babe *in utero*. Why? Because of the poisoned blood of the father or mother or both.

These curses are so often seen stamped upon children by diseased parentage that the intelligent physician is in constant dread of the results which are likely to follow his *enceint* patients when husband or wife is a drinker.

The little unborn body and brain having been stung by the alcoholized blood of the parent, and so poorly nourished that the child grows up to feeble manhood or womanhood, and if attacked by actual disease he is very likely to go down under its pressure for want of proper vitality and recuperative power, from which an ordinary constitution would recover without semblance of danger.

I once met a lady whose father was a hard drinker. She was born with a craving appetite for liquor, and suffered the torture of the curse of inheritance in her almost constant struggle against the maddening appetite which her father left her as a legacy.

She was a resolute and determined lady, an active Good Templar and had by her indomitable will power succeeded in keeping clear of the tempting bowl. But the paroxysms occasionally came and she had to meet the demon with stern resistance.

But oh, her poor sister, afflicted with the same burning, craving appetite was not so fortunate in her will power, for the paroxysms came, and often she yielded and went down under the sting of the poison cup, then

came up and had a peaceful interval for a time, to fall again.

Their father died when they were girls, and the mother married the second time, more fortunately than before. that husband being a sober abstemious man, with healthy nerves, an elastic brain and pure blood.

God blessed that union with two sons, now grown to manhood, neither of them ever having had the least desire for alcoholic drinks.

If such cases are not handed down as legacies, the law of of heredity is a myth and comes as far short of representing its supposed office as a mule comes short of representing the virtues of an angel.

My own asserted opinions having been founded largely upon personal observations, I now propose to quote a few paragraphs from the writings of learned scientists, known as authority the world over, to substantiate my position.

Medical records are teeming with reported cases establishing the theory of heredity of the drink habit. Aristotle said, "Drunken woman brings forth children like unto herself." Plutarch said, "One drunkard begets another."

The scientist, Dr. Caldwell, says, "By habits of intemperance parents not only degrade and ruin themselves but transmit the elements of like degredation and ruin to their posterity."

Intemperate parents very often beget weak and poorly developed offspring, mentally and physically, and they in turn, if they ever become parents, are very likely to transmit the same direful inheritance, and as before indicated it does not always stop there but is sometimes inflicted upon succeeding generations.



Even the records of our criminal courts go far in establishing the theory.

Again we say that a very striking pathological fact, is that children cursed with a transmitted appetite often crave the favorite drink used by the parent.

Dr. Elam, a noted scientist, says, "All the passious appear to be distinctly hereditary ; anger, fear, jealousy, liberatinage, gluttony, drunkenness, all are liable to be transmitted to the offspring."

That more idiotic or feeble minded children are found among drinking progenitors by a very large percentage than among non-drinkers is so well established that had I the space I would quote from the writings of a great number of medical experts to substantiate the fact.

Dr. Beach, of great experience, says, "There can be no reasonable doubt, in fine, that not the least painful and unavoidable effects of intemperance in alcohol are the physical and mental debility and disease it entails on posterity." In citing different cases, he says, "In one case there were a son and daughter, both excellent specimens, mentally and physically, of vigorous humanity. After the birth of the daughter, the father fell into habits of dissipation and rapidly became an habitual drunkard. He had four children after his declention to inebriety. Of these, one was defective in mind, and the remainder were complete idiots.

It is a well established physiological fact that in large families of children with a drinking parent or parents, the first born are the brightest, while the younger ones are in every way inferior, showing an actual degeneracy in the drinking parent.



A case in point from my own observation. From boyhood up into manhood I knew well, a confirmed drunkard formerly a bright and respected young man, who had a most estimable wife. Four sons were the fruits of the marriage. The father had, through drinking, contracted a chronic disease of the eyes with granulated eyelids which rendered him anything but an inviting specimen of humanity. The first son came into the world with just the same condition of the eyes.

The others in turn presented the same appearance and each one was cursed with a drunkard's appetite, and each became a confirmed sot. The eldest had the least of a wrecked constitution, but in regular order they grew less physically and mentally developed down to the youngest. Many times did I see the father and four sons loaded into an ox cart or upon a sled all beastly intoxicated and the oxen started off from the village to their home.

The father died first, then the sons, commencing with the youngest, and the eldest surviving the longest and he at last dying a poor, bloated, blear-eyed degarded wretch.

What an inheritance to force upon a family of sons and that, too, when they could not refuse nor consent. There was no more doubt of the inheritance in that case than there is that Noah was not the father of Adam.

Our own late renowned Professor Willard Parker, in speaking of the influence of alcohol, said, "We must not omit to speak of the condition of the offspring of the inebriate. The inheritance is a sad one. The *tendency* to the disease of the parent is induced as strong, if not stronger, than that of consumption, can-

cer or gout. The tendency referred to has its origin in the nervous system. The children of the inebriate come into the world with a defective organization of the nerves."

A few years since a deputation of English physicians examined 50,000 children in 105 schools, and found over thirty per cent of them were suffering from mental and physical derangement, directly traceable to the drinking habits of their parents.

What a legacy to leave to an innocent offspring.



## CHAPTER XVI.

### FROM PARENT TO CHILD.

How can we expect children to live long and healthy lives when born of parents dwarfed, tainted and diseased, as so many progenitors of to-day seem to be?

Is it a wonder that so many drunkard's children die annually.

And yet how much greater the blessing their being called home at an early and innocent age, than for them to live on in their miserable condition, and in their turn to by-and-by beget children more miserable than themselves, or go down to their graves idiots, lunatics or criminals, as thousands do, having inherited these terrible tendencies.

These facts cause us to ask, if alcohol be so supporting, so nourishing, so strengthening, so productive of bodily preservation as some contend, why, why all these

calamities and diseases and death itself, so closely connected with its use?

Why should it not have strengthened the father, the mother, and in time given to their posterity redoubled energy, strength of body and mind and a prolonged, useful and happy existence?

In my own experience of over thirty years of active practice, with no small amount of observation in our hospitals from time to time, I am forced to agree with Aristototele, that drunken parents *do* beget drunken children.

Alcohol being indigestible, it never assimilates and is never utilized in the system. When taken into the stomach it is absorbed by nature's process known as endosmosis. That is, it is readily absorbed through the membranous tissues, and thus finds its way into the blood, and circulates with it to every part of the physical frame, yielding its poisoning influence all the way along.

Thus it is that children often, very often contract the disease at the mother's breast, another mode of conveying the malady of drunkenness from parent to child. The father may have been a total abstainer all his life; the mother may never have tasted intoxicating spirits until after the birth of her babe, but that child grows up to be a drunkard, not with the inheritance from either parent at birth, but nursed from its mother subsequently, in consequence of her indulgence in alcoholics during its nursing infancy; thus drawing the seeds of disease from its mother's milk.

It is a thoroughly settled principle in medicine that inebriety is a disease, and the whole medical fraternity has come to look upon and treat it as such. On that

theory are based and established our best inebriate asylums all over this and other countries.

Then it may very properly be asked is not alcoholic indulgence a vice? My answer is most emphatically, yes! It is a vice followed up by disease.

The blood of the nursing mother often becomes impregnated with absorbed alcoholics prescribed by a thoughtless physician, or one ignorant of the true pathological effects of the drug.

The lacteal vessels of the mother are active and filled with milk for the nourishment of the little one, which quickly becomes contaminated with the alcoholic potion prescribed. It is then taken into the stomach of the infant, circulated to and absorbed into its tender organs, leaving all along its way the foot-prints and effects of the drunkard's poison. The babe is no longer restless and peevish, but is innocently sleeping the sleep of the drunkard.

Poor little tender thing! it receives the engrafting of a drunkard's appetite from its mother's blood. Though not perhaps born with the heritage, it is forced upon it in the incipient, laughing, budding time of its existence.

A physician thus prescribing has much to answer for. He should be thoughtful, and careful not to prescribe intoxicating drinks to *enceinte* women and nursing mothers, with the love of his race and the fear of God in his heart.

The results of such prescriptions are often that the little ones are never sober from the earliest period of their existence until they are weaned. The mother's blood and that of the infant at the breast are in com-

mon ; for from that of the mother come the nourishment and the life giving properties of the child.

Medical statistics are teeming with recorded facts showing beyond contradiction that the children of mothers who use whiskey, wine, beer, porter or any alcoholics while nursing them, are vastly more likely to become drunkards in after life than those whose mothers carefully avoid their use.

Such children do not usually have so much mental activity through life, they have less keenness of vision, less nervous equilibrium, less capability for great mental or bodily achievements, less vital power to ward off disease, or withstand it when attacked.

Men are often heard to say they are cursed with a craving appetite for strong drink and attribute it to the fact that their mothers drank liquor by the advice of their physicians when they were nurselings and that they had been obliged to fight the cravings all through life to keep from drinking.

While the mother is soothed by alcohol the child is nursed into its first drunkenness. So the mother learns that when the babe is restless she can quiet it for a time by alcoholizing her own blood, by taking brandy, whiskey, wine, porter, ale or stout with her dinner, not realizing that she has permanently increased in the little one the irritability which she seeks temporarily to allay.

So the mother under those circumstances is laying the foundation, not infrequently for future drunkenness in that child, when, perhaps, it was born with blood and nerves and brain free from hereditary taint, but was soon thereafter started on its downward course by the thoughtless parent.

If from any cause the mother is unable to furnish sustenance for her child how carefully she selects the nurse who is to fill her place ; she must be a woman of unblemished character, of sunny disposition, and if it were so much as suspected that she was addicted to the use of intoxicating drinks, she would be immediately discarded. Yet the stupid physician will prescribe these very drinks to the mother, and the child imbibes a love for them in its first, unconcious infancy.

In a word of digression allow me to speak of another practice that should be abandoned. The custom of feeding the little crying babes soothing syrups and quieting compounds containing alcohol, as many of the quack nostrums of the day, do. Such practice is simply devilish. No Mother has a right to make her babe drunk to quiet it.



## CHAPTER XVII.

### ALCOHOL A GAY DECEIVER.

Some people drink to make themselves hilarious and happy. Here they deceive themselves. The temporary activity that the alcohol imparts to the brain is simply a production from the dilatation of the cerebral blood vessels which produces temporary exhilaration. But it is only temporary, always being followed by a little depression more or less according to the extent to which the stimulation, or irritation is carried.

As we have already learned, the effects of alcohol

are more marked upon the brain than upon any other organ of the body. The depression is caused by the paralyzing effect of the drink, often leading to an utter loss of self control. Here again alcohol proves itself a gay deceiver by making the boisterous drinker do things for the amusement of others which he would not do when in his right mind, and those which are disgusting to his associates unless they be in the same maudlin condition.

That sort of increased buoyancy is damaging to the constitution, debilitating instead of strengthening, irritating instead of soothing, and every repeated periodical of the practice is one step more toward an untimely end.

In many other ways it is a gay deceiver. It makes a man boast of riches when he had not a dollar to his name (the saloonkeeper has it) ; it makes him feel independent of his fellows when he is entirely dependent, it makes him think he is smart when he is playing the fool, it makes him imagine himself warm when he is cold below the normal. All these and vastly more from the damaged, disturbed condition of the blood vessels of the brain.

Again, many imagine themselves impregnable to the power of infectious diseases if they be well filled up with tanglefoot whisky, brandy or some other strong member of the alcohol family.

But that, too, is a grave error, for the condition of the system under the influence of alcohol renders it far more susceptible to pestiferous influences because of the temporarily weakened condition of the nerves, blood vessels and viscera of the body.

Brain workers are too often deceived by the wily de-



mon, and as a class, they of all men should avoid it, as they are the least able to resist its ravages. It unduly excites their brains, enfeebles memory, blunts imagination, dethrones reason and plays traitor to their confidence. Such are the ones who break and go down in the shadow of dethroned early manhood. Another of its deceiving peculiarities is, that great bodily damage is often done by daily imbibing, not to the extent of intoxication even, but so-called moderate drinking, which sometimes leads to an aphthous or ulcerated condition of the stomach, softening of its lining membrane, and yet so little apparent disturbance that often the victim is unaware of any pathological change taking place until it is too late for remedial relief. Just such cases have come under my own observation. Truly alcohol is a gay deceiver.

"They talk of the man behind the gun,  
And the deadly work that he has done,  
But much more deadly work by far  
Is done by the fellow behind the bar."

The temperature of the body is always lowest in the morning before partaking of any food, increased during the active digestion of ordinary mixed food from one to two and half degrees, again decreasing after digestion and assimilation is completed.

On the other hand careful experimenters have positively demonstrated that the introduction of alcohol, four ounces of brandy for instance, after the full digestion of a meal increases the heart's pulsations ten per minute, at the same time diminishing the usual necessary exhalation of carbon, but in a little time the action of the heart is somewhat lessened, and in a short time more the temperature begins to fall, attended

with an increased reduction of exhaled carbon. In three hours under such circumstances the temperature will fall very perceptibly.

Thus it is demonstrated that by the introduction of alcohol into the system, nervous activity and sensibility are lessened as well as that of the brain, muscular tone and strength diminished and digestion interrupted, as alcohol is not assimilated in the blood which it enters nor converted into any of its natural elements, but is a vile intruder, leaving its poisonous sting all along its journey through the system, lending nothing to the repairing or building up of waste material, comparatively unchanged when the scavengers of the body expel it therefrom.

Yet it has succeeded in accomplishing something along its route. It has retarded the force of the circulation, lowered the temperature and vitality of the body, interfered with and deranged the offices of the nerve structures and brain, deteriorated the blood corpuscles thus increasing the liability to fatty degeneration.

Alcohol is therefore not a builder up of tissue substance in the living body, imparts no force, strength nor power, thus furnishing little or nothing to be utilized as food in the bodily organism.

In *common parlance* alcohol never keeps out cold. Alcoholic drinkers suffer from an undue rush of blood to the surface of the body owing to the paralyzing effect of the poison upon the fine set of nerves called the *vaso motor* system with which the muscular coats of the vessels are liberally supplied, thus robbing them of their controlling power over the delicate muscular walls, leading to the over-distension and an abnormal

flow of blood, which greatly lessens their absorption of oxygen.

Then, too, the cardiac vessels, those which supply the muscular struture of the heart, are affected in the same way, hence the lessening of the contractile force of that organ.

Whenever an extra amount of blood is rushed to the surface of the body it is done at the expense of the internal organs, lowering their temperature. It takes but a limited amount of alcohol to produce a waste of internal bodily heat.

When the drinker thinks he experiences a change in the way of increased temperature after alcoholic indulgence, he is deluded, for the physiological fact is that the sensibility of his brain is functionally lessened, and the impressions of the change is erroneous and deceptive. Such a fancied modificatun is manifested in his mind and not his body.

In the same manner a false impression of strength is often obvious ; the dilated vessels carrying more blood to the muscles, they are made for the moment to appear strengthened, but as there is not enough blood in the body to keep up an equilibrium the false fancy is soon vanquished.

In 1786 over 22,000 persons were gathered at a great feast in St. Petersburg in its immense halls, given by the Prime Minister of Russia, Prince Potemkin, upon which occasion brandy was served *ad libitum*, and so freely imbibed that drunkenness ran rampant among them. When they started for their homes in their maudlin condition in the cold crisp chill of the night, they could not endure the change, and their own temperature fell so rapidly that 16,000 of them perished

as the result. The only survivors were those who had imbibed less freely. It will be a glorious day when the liquor traffic shall meet its final overthrow, as it certainly will in God's good time. He may now be raising a Lincoln for its overthrow. We shall see. Alcohol *is* indeed a gay deceiver.

There was never known such a thing as a natural appetite in man for intoxicating liquors, because God never thus created him. Such a thing would be an anomaly, a perversion.

A natural appetite is a demand for something that is supplied through God's agency, not for something He never created.

But intemperance creates an appetite, an ungovernable longing for that which kindles in the human system an unquenchable fire of hell, to the destruction of body and soul.

How strange that man will allow himself, in the light of this twentieth century, with a world full of evils for a warning, to be duped by this, the devil's gay deceiver, when he might so live as to fully enjoy the sweets of life in this beautiful world of ours, making its sunshine and its shadows tributary to his march on to a final victory, master of himself, standing up in the dignity in which God created him, in the stature of a noble manhood.



## CHAPTER XVIII.

### ALCOHOLISMUS.

Alcoholismus is a toxical state of the system, or its sequel, known as alcoholism, under which the body is

thrown into a condition for the procreation of a great line of maladies, as its resisting power against the forces of causation is greatly lessened by the operation of alcohol, and the liability to fatal results proportionately increased.

The effects of inebriety or alcoholism are evidenced in many alarming diseases, one of the most common and dangerous being fatty degeneration or superabundance of fat, indicating an unhealthy condition of the soft structures of the body, often general, but frequently centered upon one or more of its vital organs. The blood becomes so loaded with fatty globules that it is obliged, by nature's laws, to deposit them along its route among the muscular fibers, in and around the heart, liver, lungs, kidneys and other viscera and it becomes incapacitated for performing one of its important functions, that of eliminating the general impurities of the system.

Poisoned blood, as with alcohol, cannot perform the office nature has assigned it, so the waste matters of the body must be eliminated from the blood in some way, hence they are deposited in by-places as above indicated. Drinkers of alcoholics often look to be in health when their constitutions are really being slowly but surely undermined by the constant intrusion of the alcoholics imbibed.

The redundancy of flesh and the floridity of complexion, upon which so many congratulate themselves as an indication of health and strength, is, in the drinker's case, a signal of disease, and a warning that nature's functional arrangements are being encroached upon. Beer is one of the leading trespassers along this line, and the system is so thrown out of harmony

and into discord that it is a dread to the physician when called to treat any illness or injury for such a patient, as he knows that under such circumstances the result is almost universally fatal.

The list of toxicological writers is a long one, who unequivocally aver that alcohol is a narcotic or a narcotico-acrid poison. Many cases are on record of persons who died immediately or soon after excessive draughts of ardent spirits. Why? Because the system was poisoned by the alcohol being rapidly absorbed from the stomach into the blood, to the heart and brain; the nerves or nerve centers became paralyzed to such extent that they lost control over the heart, which organ ceased to pulsate and death closed the scene. Yes! Modern science proclaims in no mistakable terms that *alcohol is a poison*.

When the nutritive fluid, the blood, becomes devitalized the tissues dependent upon it must suffer proportionately. Our bodies are constantly undergoing change, wear and repair are continually in operation.

So waste tissue must be supplied. Dr. T. K. Chambers, physician to the Prince of Wales, has very pertinently observed that the arrest of renewal is disease and that the cessation of renewal is death.

He also says: "It is clear that we must cease to regard alcohol as *in any sense* an aliment, inasmuch as it goes out as it went in, and does not, so far as we know, leave any of its substance behind it."

It is patent to every pathological observer that alcohol is a direct opposer to the renewal of tissue by its poisonous action upon the blood, and cannot be otherwise classed than as a poison.



The following from the pen of the learned Dr. Richardson sums this whole matter up in a nutshell. He says: "I have learned purely by experimental observation that in its action on the living body, this chemical substance, alcohol, deranges the constitution of the blood; unduly excites the heart and respiration; paralyzes the minute blood vessels; increases and decreases, according to the degree of its application, the functions of the digestive organs, of the liver, and of the kidneys; disturbs the regularity of nervous action; lowers the animal temperature, and lessens the muscular power.

In our study of the effects of alcohol upon the human economy we learn that the drug is a poison; that if it contains any nourishment it is so slight that it is not worth the paper upon which to mention it; that it inflames, congests and ulcerates the stomach and intestines, that it enlarges and fattens the kidneys, spleen, liver and heart, that it incites diabetes, Bright's disease and delirium tremens; that it irritates, congests inflames and hardens the brain and fans the flames of cholera, small-pox, yellow fever, pneumonia and kindred diseases.

That it readily mingles with, and impoverishes the blood in its circulation, overtaxes the heart's action, enlarges and weakens the small vessels, absorbs the watery element of the ablumen of the blood, nerves and brain, paralyzes many of the *vaso motor* nerves, disorganizes the nerve centers, distorts the blood globules, weakens their functions and deranges nearly every organ through the system, like a bull in a china shop, proving itself far from being a blood-forming or haemo-globinogenteic, as some of its advocates would have us believe.



That it impairs the appetite, induces thirst, retards digestion; enervates the muscles, lessens the power to resist cold, weakens the mind, deteriorates the memory, paralyzes the judgment, creates fretfulness, embitters the temper and increases the animal propensities.

These are a few of the drinker's blessings.



## CHAPTER XIX.

### BODILY HEAT AND DRAINAGE.

The elements of animal life are warmth, growth and repair, giving health and strength. The first necessity of human existence is warmth in all periods of life, at all seasons of the year and in every clime, where the human body in health maintains the same temperature. This requisite warmth, God has provided for. He did not leave it half arranged, for man to supply with alcohol, but so ordered that it is constantly derived from the food we eat, and that which produces the most warmth is called carbonaceous, representing carbon in charcoal, never furnished by alcohol.

When food is taken into the system it undergoes a process of combustion and the carbon it contains gives out the heat we require for life, which is diffused over the body, called vital heat. The amount which is generated in a person of full size in 24 hours would be sufficient to heat twenty gallons of ice cold water to the boiling point. Those kind of foods which produce the most heat or are the most carbonaceous are sugars, starches and oils. Alcohol does not enter into

the list. Nature seems almost incomprehensibly wise in her demands and the requisites furnished to supply them.

The infant derives its heat largely from the sweets with which the mother's milk is well supplied. While the nursling does not crave fats it does crave sweets, which its nature demands. In the first article in this series I spoke of the deposit of carbon and the combustion in the capillary vessels of the body, the circulating of the impurities, carbonic acid gas, etc., and back to the lungs for expulsion.

But that is only one of the channels of the body provided for drainage purposes, if I may be allowed the expression, yet in these short articles I cannot enlarge in their description.

Another of the great channels is the skin, which performs very important functions in this great clearing process and equalization of heat, upon which writers do not seem to elaborate so much as upon the lungs, liver and kidneys, but which is of such vital importance in the great economy of life that I must give it more than a passing notice. It is generally agreed by physiologists that cutaneous exhalation exceeds the watery discharges of both bowels and kidneys.

As the weather is warmer or colder the skin and kidneys alternate in their respective labors of elimination, the skin exuding the most in warm weather and the kidneys disposing of the most in cold. Cutaneous exudation is directly produced by a vital process and is not merely an oozing of moisture through the pores of the skin. The great class of scavengers of the body are the lungs, skin, liver, kidneys and alimen-

tary canal. These organs sympathize with each other in their labors of throwing off extraneous or waste matter.

The skin is so abundently supplied with nerves and blood vessels that you cannot puncture it with a fine needle without wounding a nerve and producing pain and opening a blood vessel and drawing blood. It may almost be called a network of blood vessels and nerves of the very finest texture, and in a man of ordinary size covers 2,500 square inches.

In one sense it is really a vast breathing apparatus, in that it so greatly assists the lungs in their important functions of eliminating extraneous or waste matters from the body. It is also the great seat of the sensation of touch, an important auxiliary in the regulation of bodily heat.

When the pores of the skin are closed their office falls upon the other organs mentioned and increases their labors, thus the exhibition of sympathy between them.

That the skin really acts as a sort of respiratory organ is evidenced by the fact that it secretes carbonic acid and absorbs oxygen from the atmosphere, thus imitating the lungs and aiding them in their functional duties.\*

As a regulator of bodily heat, the skin performs a very important part in addition to its other excretory functions. In hot weather it emits a free exudation of moisture which lessens the temperature in passing from a hot, dry state of the body to that of a liberal perspiration, the evaporation of which imparts a delightful sensation in preventing too high a degree of

---

\*See Chapter 32.

heat in the body. When accelerated by heat or exercise, this exudation increases to the amount of drops, designated as sensible perspiration.

This anatomical cutaneous arrangement is for the wise purpose of assisting the lungs in throwing off extraneous or impure matter from the blood, particularly carbonic acid, as well as to assist in regulating the bodily heat.

Nearly twice as much water passes off by the skin as by expiration from the lungs. The skin performs a very important part among the excretory organs in throwing off effete or worn out matter, for which purpose it is armed with an almost innumerable amount of little spiral tubes, the mouths of which we call pores of the skin. Their numbers are somewhat surprising to those who have given them but little thought. Every square inch of human skin contains about, 2,800 and the number of square inches of surface upon a man of ordinary size and height is 2,500, so the number of these pores on the whole surface of the body is 7,000,000.

Those little tubes, or ducts, are about one-fourth of an inch in length, so that the whole average extent of tubing is about 28 miles. Through these tubes and pores there is more or less exudation of moisture going on from the first breadth of infancy to the last tottering steps of old age and to the last breath drawn.

It is estimated that for every seven pounds of food and drink taken into the stomach, five corresponding pounds come out through the skin.

From the long continued experiments of scientists, the conclusion has been reached that the average amount of this exhalation thrown out every 24 hours

is about 33 ounces. The refuse matter is gathered up by the blood vessels and conveyed to the skin by their minute ramifications and thrown out as above indicated.

A beautiful little experiment which indicates this constant transpiration is easily performed by placing the naked hand and arm into a deep glass jar and closing the aperture around the arm perfectly air tight, when the inside of the glass will soon be covered with a vapor which will become more and more dense until it assumes the form of drops.

Boerhaave says, "if the piercing chill of winter could be introduced into a summer assembly the insensible perspiration being suddenly condensed, would give to each person the appearance of a heathen diety wrapped in his own separate cloud."

With all this beautifully arranged mechanism from God's hand for the perfect discharge of important functional offices, can we for one moment believe that He ever designed that we should dare to thrust an irritant disorganizer into its composition? All these intricate arrangements are impaired by the touch of alcohol. It clogs the excretory channels, creating diseased fats, irritates and inflames all the viscera of the body, degenerates and weakens them, deadens the sensibility of the *vaso motor* nerves which control the blood channels in the brain, overtaxes the heart's action and poisons the blood.

The late Dr. Norman Kerr, a noted specialist in inebriety, consulting physician to the Dabrymple Inebriate's Home, etc., said: "All the alcohol in the world will not contribute a drop of blood, a filament of nerve, a fibrilla of muscle, a spiculum of bone to the human

economy. On the contrary there is death in the cup, waste of strength, decay of substance, destruction of tissue, degradation of function, material death."



## CHAPTER XX.

### THE AIR WE PREACH.

Pure air is the breath of life; impure air is the breath of death. If we become concious of breathing it is pretty evident the air is not in good condition, or we are in some way physically wrong.

Breathing vitiated are poisons the blood, and if to much extent and continued, it produces death, as in the striking case of the 140 Englishmen who were shut up in the black hole of Calcutta in 1756, when all but 23 died before the next morning for want of pure oxygenated air to breath.

An ordinary sized man consumes about 45,000 cubic inches of oxygen, and throws out about 40,000 cubic inches of carbonic acid gas every twenty-four hours.

How ridiculous and suisidal it is to spend one-third of one's life in a little non-ventilated seven by nine bed-room, as thousands are still doing. No wonder so many pale, sicken and die earley. How many bed-rooms to-night will be carefully shut lest a breath of God's out door pure air shall find its way in. Night air is wholesome and every sleeping room should have a good supply of it. Every sick room should be well ventilated.



The sleeping room should be one of the largest in the house.

Plenty of fresh air night and day, good food in moderate quantities, full nights of sleep, abstinence from tight lacing and alcoholic stimulants, a cool head and warm feet give one a pretty sure passport to a ripe old age.

In a former article I briefly referred to the process of re-oxygenation of the blood through the medium of the air inhaled, which, as there indicated, is composed of 21 parts of oxygen, 78 parts of nitrogen and one part of carbonic acid gas.

As air is inhaled it contributes its oxygen to the blood and takes up carbonic acid gas which is deposited along the way by combustion as previously described, and water which is impregnated with impurities the blood has gathered up in its course, which is carried to the lungs and thrown out in the open air. Thus the explanation for our breath always being so moist, as shown when we breathe upon a polished metal plate or a glass mirror, and as illustrated by condensation when we breathe out in the cold air of winter.

The losses which are taking place in the body consist of heat or force (energy), solid matters and water. Though the air we breathe contains water, it possesses much more when it is exhaled from the lungs. So also is a large quantity thrown out through the pores of the skin.

Alcohol cannot replace this water-waste any more than it can the waste of solid bodily substances. The most essential and indispensable component part of



the air is its oxygen which changes the blood to its bright red color, indicative of purification.

Confined carbonic acid gas to the amount of three or four per cent. acts as a narcotic poison, while if it were increased to one-twenty-fifth of the entire air present it would destroy life. Thus the necessity for nature's wise provision for eliminating it from the system.

Breathe for a little time into an empty bottle, then cork it tightly for a few hours, and when opened it will emit an offensive odor indicating the decomposition of animal matter that has been exhaled.

By analytical chemists it is estimated that about 25 per cent. of oxygen is given out from the air inhaled and about the same per cent. of carbonic acid gas absorbed or taken up by it.

To maintain a sound body it is necessary to keep the blood well aerated, that is, well oxygenated, that its channels may be clearly uninterrupted through which shall be conveyed suitable and requisite nourishment for bodily sustenance. For instance, the brain will not, can not perform its delicate and important functions in any degree of perfection if not copiously supplied with well oxygenated blood, Neither can the muscular system meet its demands under like circumstances.

While food nourishes the muscles and sustains their force they are toned into action by the oxygen with which the blood supplies them.

But perhaps no one of the viscera of the body suffers more when deprived of the requisite amount of oxygen than the lungs.

Habitual drinkers of alcoholics are constantly draw-

ing in full inspirations almost, oft times, to the over distention of the lungs, because the alcohol has robbed the blood of its oxygen to so great an extent.

The drinker needs a free current of air and he often sleeps with his hands clasped over his head which gives the chest more freedom of expansion. The real physiological action is, that the presence of so much alcohol in the system retards the change of venous into arterial blood, (which process was explained in a former article) by its preventive influence upon the functional power of the blood for absorbing oxygen.

Whenever alcohol is introduced into the system it greatly interferes with the oxygenation of the blood as well as with the process of assimilation of food.

Steele in his Hygienic Physiology says: "The perfection of the organs of respiration challenges our admiration. So delicate are they that the least pressure would cause exquisite pain, yet tons of air surge to and fro through their intricate passages, and bathe their innocent cells. We yearly perform at least seven million acts of breathing, inhaling one hundred thousand cubic feet of air, and purifying over three thousand five hundred tons of blood, etc."

Thus we see these wise provisions of nature and the intricacy of the beautiful mechanism which God has so wisely provided for the necessary adaptation of the elements of the air we breathe and the food we eat for the building up and reparation of the tissue wastes that are constantly going on in our bodies, and yet men in their ignorant or wilful blindness, or stupidity, will defile their bodies with alcoholic indulgences which poison and throw all the beautiful machinery of man's body into discord, as I have tried

to demonstrate in regard to their physiological effects, in prior articles.

To preserve the system in good condition for the performance of its functional duties, it is very patent that strict abstinence from alcoholic liquors is not only wise but physiologically necessary.

The stupid people who think liquor-drinking is bliss are not all dead yet. But the advocate of total abstinence is dubbed with the sobriquet of fanatic, fool, crank, extremist, loony, narrow-minded, bigot, etc., etc., and the whole English vocabulary has been exhausted in the use of adjectives for his illustrative epithets.

The drink traffic has blighted many a nation and loaded it with an accumulation of direful miseries. It has clouded the proudest names and laid low the Cyclopean, it has bowed the heads of many mighty statesmen in shame and disgrace.

It has made itself the bitterest foe to state and church. The church should meet it with a determined opposition, an uncompromising purpose to resist its dastardly stings and give it no quarters.

Outspoken and active opposition to the liquor traffic should be regarded in this day and age of the world as one of the cardinal principles of every church in every land.

But churches are oft-times slow to act against the rum-seller's interests in fear of offending present and prospective pew-holders.

A reverend gentleman of England has said: "Some people fancy that churches are merely fire insurance agencies, and that for a premium you can be by them secured against the 'wrath to come.' In the minds of

these last estimable and orthodox people it is a virtue to preach about the many mansions in the sky, and a crime to talk about the better housing of the poor on earth. It is an effort of sublime spirituality to rhapsodise over the pearly gates and golden streets, but the clear indication of a carnal mind and an unregenerate heart to consider the slums or them that dwell therein. They love to think of the River of Life, flowing pure as crystal from the Great White Throne of God and of the Lamb; they are shocked if you call to their recollection the River of Death, flowing black as hell from the open flood-gates of the brewery and the distillery and the public house. It is right and wise to impeach Balaam, denounce Eve, and open fire from an unmasked battery of penny pop-guns upon 'extinct Satans,' but to enter into a hand-to-hand encounter with real Satans, with blind ignorance, legalized oppression and political crime is a blasphemous endeavor to get God's will done on earth as it is in heaven."

The church holds a power equaled by no other organization, and would it, to its fullest extent, fulfill its mission, the rum oligarchy would soon be annihilated. Many branches of the church have awakened to the great importance of its bounden duty, and in conference, synods, assemblies, etc., have resolved and re-resolved, talked and prayed, all of which are right and praiseworthy, but they require action behind them, which to no very great extent has it yet materialized, for want of honest, earnest effort on the part of the masses. A few are nobly doing their duty, but the others—oh,—well—

Let the united church awaken to her full responsi-

bility and power and we shall soon see the liquor traffic buried so deep below perdition that the devil in his wild frenzy will marvel at the change and in amazement wonder whither it has gone. When the church fully arouses to the situation and unitedly enters into the contest, we shall see the beginning of the end.



## CHAPTER XXI.

### NATURE'S REQUISITE FOR RECUPERATION.

We have seen that our bodies are constantly undergoing changes in a continuous round of waste and repair, a constant fire or oxidation taking place, waste or worn-out matter being carried off, the outgo of which is supplied by the food we eat, from which all our strength and force are derived, by its particles being broken up, and with the magic aid of, or the combination with oxygen, the process is carried out, and life, strength and force supported.

Different portions of the body require different kinds of building material to keep up its equipoise and physiological requirements.

For instance, the tissues of the body contain a marked amount of nitrogen, consequently to keep them in a healthy condition for their functional duties, food containing nitrogenous properties, such as potatoes, the juices of succulent plants, must be taken to contribute to the constant tissue-waste taking place. Such substances are easily and readily oxidized.

Chemists have no difficulty in tracing "nitrogenous foods in their formation of tissue, and Liebig's Animal Chemistry frequently speaks of them as "the plastic elements of nutrition."

Other nutriments containing carbon to keep up the heat and fatness of the body are required, such as sugar and fats, which entering into the composition of different tissues, do a double duty in producing both heat and force.

Mineral substances are also requisite, such as salt, phosphorus, lime, iron, etc. Salt enhances the secretion of some of the fluids of digestion; the system demands it, and man and the lower animals crave it.

In Letheby's writings we are told that so great is the craving for it that among the Gallas on the coast of Sierra Leone, husbands will sell their wives, brothers their sisters, and parents their children to obtain it; that it is used in the baptismal services of the Latin church, by the priest putting a pinch of it into the child's mouth accompanied with a saying, "Receive the salt of wisdom, and may it be a propitiation to thee for eternal life."

We all know how dumb animals crave it, and how far wild ones will travel to secure it from a lick.

Phosphorus lends activity to the brain, lime commingling with acids contributes to the solidification of the teeth and bones, while iron is utilized in the blood disks. Most of these are provided for in the fruits, seeds, vegetables, meat and bread we consume.

Then how are all these elements brought into the proper state for assimilation, of which we know so little after all—merely what we can gather from flash-light glimpses of the Creator's works?



By the breaking up of the food particles and the extracting their properties by nature's great chemical laboratory, so well fitted out with all the necessary implements, the digestive canal; thence carried respectively to the different parts of the great original structure through the absorbent system of veins and lacteals and the general circulatory system of bloodvessels.

Although we think we are wisely penetrating into the mysteries of nature and the composition of our own selves, we are able to comprehend a few only of the minor flash-lights of God's wisdom. Yet we have compassed enough to teach us better ways of living than the masses of mankind are following out.

The Omniscient wisdom displayed in the arrangement of the digestive apparatus alone, that great curvilinear channel extending from the mouth through the trunk of the body about thirty feet in length, is sufficient to demand and receive from us, a more reverential obedience to the laws governing the functional offices with which the Creator has so wisely endowed us.

In the process of digestion and assimilation of food, a large amount of pure water is required, which is the real vehicle of circulation, the dissolvent of solid foods, and carries in solution the nutriment in the blood from point to point as required in the system, and washes away the refuse or effete matters.

Thus we have been talking of nature's wise workings and demands with no vile intruder like alcohol to interfere with her regularity. Now for a moment let us compare the action of alcohol with that of water as just briefly noticed. Alcohol does not assist in the



assimilation of food to the use of the tissues, but unlike water it retards that process. It degenerates the blood cells, water does not. It promotes waste of force and irritates tissue, while water assists food in producing and keeping up force. Alcohol, unlike food, is never converted into nor assimilated with the component parts of any organ of the body; thus it is incapable of assisting in the building up or repairing any waste in the bodily organism.

Another great evil produced by alcohol is its absorption of water in its circulation through the system, for which it has a strong affinity, thus, in common parlance, drying the tissues, absorbing the bodily juices, and inflaming the general membranous system, so these fluids really have to come to the rescue and mingle with the alcohol to weaken it and hurry it along in the general circulation until it becomes eliminated.

Alcohol is a great drag-weight upon the public health, and yet there are theorists, in limited numbers, who advocate the proposition that alcohol has an important value in a recuperative way, at least, and thus they fall under the wild delusion that it must needs be a reparative agent. Never was mortal man more deceived than with such an idea.

That the different foods as classified are in their assimilation to some extent also interchangeable in their adaptation to the different bodily requirements, there is no doubt.

It is most thoroughly established that alcohol does not produce a healthy growth of fat in the human organism, but quite the reverse. An increased de-

posit of fat under alcoholic indulgence is abnormal, is truly disease.

Whenever healthy functional action is interfered with by alcohol, or otherwise, to the extent of increasing the adipose tissue, it is indicative of a diseased condition or imperfect nutrition.

While an increased adipose accumulation is often desirable and beneficial when it is produced by nutrients, it is just as undesirable when produced by alcohol, which does not develop muscle.

A person may increase greatly in avoirdupois by the growth of a fatty tumor, but nutriment would come in for no part in the development as a cause for the local change. A gentleman was once passing through a medical museum in company with one of the surgeons of the institution and came upon an immense glass jar containing an adipose tumor marked as weighing seventy-five pounds. The surgeon was asked how much the patient weighed without the tumor, who answered, "ninety pounds." "Did you save the patient?" "No," said the surgeon, "but we saved the tumor."

It may be asked, "why does alcohol hasten the process of degeneration and cause drinkers to become more fleshy and corpulent?" One of the principle reasons is that it prevents the removal of fatty globules which accumulate in the blood, and hinders the elimination of waste matters from the cells and tissues of the body.

What is the remedy for all these evils? I answer, from a physiological standpoint, total abstinence from all intoxicating liquors. So long as men and women

indulge in their use, so long will these direful result follows as inevitable consequences.\*



## CHAPTER XXI.

### IS ALCOHOL NECESSARY IN THE TREATMENT OF DISEASE?

It is said of John Stewart Mill that he was once asked by a young lady friend to explain a certain perplexing problem in social science, and after giving close attention to his clear exposé of the matter in question, the young lady excitedly exclaimed, "Oh, Mr. Mill, how I envy your head, "when Mr. Mill quickly retorted, "And my dear young lady, how I envy your heart."

To whom the young damsel instantly shot out the following rejoinder; "Since I envy you your head and you envy me my heart, it seems most fitting that head and heart should go into partnership."

In due time the interests of the philosopher's head and the pupil's heart became identical.

In the brief consideration of the important subject of this paper, the head and heart are called into an alliance. I am fully aware of the views of the extremists in and out of the medical profession, and while I am radical upon the subject, and principled against alcohol in all its forms when empirically used. I shall fearlessly propound my ideas as formed from over thirty years in the private practice of medi-

---

\*See Chapter 30.

cine, and much hospital and clinical observation from time to time.

Among the poisons in remedical use in the hands of the medical profession are such leading articles as opium, morphine, aconite, chloral, strychnia, belladonna, atropine, arsenic, prussic acid, nitroglycerine, nitric acid, digitalis, alcohol, etc., etc.

Among the most dangerous in common use, ranks alcohol; its pernicious and far reaching effects cannot be discussed at any length in the brief space allotted to this article. I can only refer to it in few words as a necessary remedial agent in the treatment of disease. As such do I believe it necessary? As a general remedial agent, as we so often find it in general use, my answer is most emphatically, No !

In extreme cases when a speedy excitant is required like any other poison drug it may be administered by a competent physician carefully directed. Upon this point I will speak more at length in a succeeding chapter.

One of its first effects is over-excitement of the vascular and nervous system, an effect always to be guarded against in the treatment of disease.

Under its influence, the brain, spinal cord and great ramifications of nerves branching out from them become deteriorated, leading to the worst forms of nervous derangements, results to be carefully avoided in the use of all drugs.\*

Each poison drug has its own specific effect upon some particular organ of the body, as for instance, strychnia upon the spinal cord, arsenic upon the mucous membrane of the alimentary canal, mercury upon

---

\*See Chapters 6, 7, 16 & 30.

the salivary glands and mouth, iodine upon the lymphatic glands, digitalis upon the heart, alcohol upon the brain, nerves, heart and blood vessels. Toward the brain and nerve centers, the most vital and important functionary organs of all, alcohol seems to have special deadly designs.

The physiological effects of this narcotic poison are precisely the same in large and small doses in like ratio, and as it is never assimilated in the system, it is there as a foreign body and intruder.

It never acts as a tonic, but simply as an excitant by its local irritant effect upon the nerve extremities, soon followed by depression and enfeebled respiration, thus showing conclusively that it does not support animal force.

Then again it disturbs the heart's action and interferes with the circulation of the blood by hardening its albumen, a condition to be dreaded in any form of diseases.

By some physiologists alcohol is denominated a stimulant, and by others only an irritant. As Sir Benjamin Brodie has wisely said, stimulants do not create nerve power; that they merely enable you as it were, to use up that which is left, and leave you more in need of rest than before.

Dr. Lee Norris says: "Alcohol is never beneficial to a person in health, and no poison is more certain in its action than alcohol.

Dr. Winter, an English physician, in a discussion, wrote some verses, of which the following was one.

"Suppose we own that milk is good,  
And say the same of grass,  
The one for babes is only food  
The other for an ass,"

Dr. Barden Smith says, "The human race would be just as well if alcohol did not exist."

Dr. N. S. Davis, a scientist of authority in this country, says, after an ample clinical field of observation in both private and hospital practice for more than fifty years, and a continuous study of our medical literature, I am prepared to maintain that the ratio of mortality from all the acute general diseases has increased in direct proportion to the quantity of alcoholic remedies administered during their treatment.

How can we reasonably expect any other result from the use of an agent that so directly and uniformly diminishes the cerebral, respiratory, cardiac and metabolic functions of the human body? Both the popular and professional beliefs in the efficacy of alcoholic liquids for relieving exhaustion, faintness, shock, etc., are equally fallacious."

We have now, both in Europe and in this country, large hospitals treating their thousands of cases without one drop of alcohol and with most satisfactory results. In some hospitals whole wards have been divided, some upon the old alcoholic treatment and others upon one entirely free from its use, and the percentage without it was fully equal to that with it, and in some wards much greater.

It is a dangerous experiment for a physician to prescribe alcohol as a curative agent in disease, and I am glad to announce that the medical fraternity have at last arrived at a point when they are looking into the dangers of the practice, and hosts of leading minds are calling a halt in its use. Intemperance is the curse of all curses of modern civilization. So many have been, and so many are now addicted to the use of alco-

holics that a physician in prescribing it in illness little knows what a conflagration he may be kindling by applying the fuel to the lingering, latent spark hidden within his patient, then when other drugs will answer better he is not excusable for the practice.

Physicians should be wise, thoughtful and judicious and remember that they have not only the welfare of their patients at stake, but possibly, progeny yet to follow. They should never prescribe alcohol when it can be avoided, as it is more dangerous and more treacherous than either of the other poisons I first enumerated.

"Oh," you say, "are there times when it cannot be dispensed with?" Here is where, as a medical man, I am compelled to draw a median line. There are conditions which are difficult to bridge over without the immediate action of a diffusible stimulant, or as some may choose to term alcohol, an irritant, to excite the heart's action more quickly than can be accomplished with ammoniacs. But those instances are very, very rare, and then it is more the mechanical effect that is sought than a curative one; something else must be looked to for that end. But this should be only for a temporary relief when all else fails, as that is the only medicinal virtue it has.

When a conscientious physician is (if ever) forced to its use in bridging over a chasm of sudden relapse or prostration, attended with apparently empty blood vessels he should do so with a mental protest, realizing that he is inevitably doing mischief in some other direction, and should not continue its use longer than a few minutes required to produce a rallying effect.

Under no other circumstances do I consider alcohol



advisable as a remedical agent in the treatment of disease.

Physicians are not all exempt from yielding to the force of habit, and some have prescribed alcoholics so long, as a supposed remedy that they still go on in the old ruts, regardless of causes or effects.

This is noticeable, not only in private practice, but also in many public institutions, such as some of our insane asylums where in many cases the patients have reached their unfortunate conditions through the drink habit, and yet the appetite is kept alive and fired up by the use of alcoholics permitted or prescribed.

But thanks to the recognition of hygienic laws, and the light of the latter part of the nineteenth century leading to the improved treatment of disease at the present day, among hosts of our leading medical minds.

Nowhere should the effects of alcohol be more closely observed, and its deleterious effects be guarded against than in insane asylums where the terrible effects are apparent.

Dr. R. N. Bucke, Medical Superintendent of the Asylum for the Insane, London, Canada, in a report said, "As we have given up the use of alcohol, we have needed and used less opium and chloral; and as we have discontinued the use of alcohol, opium and chloral, we have needed and used less seclusion and restraint. I have, during the year just closed, carefully watched the effect of the alcohol given, and the progress of cases where in former years it would have been given, and I am morally certain that the alcohol used during the last year did no good."

With humiliation I am forced to admit that until within the recent past my noble profession has been, to an alarming extent, and is still too much so, inadvertently adding to the causes of drunkenness in the land, directly or indirectly, by the reckless and whole sole manner in which so many of its members have prescribed alcoholic stimulants in their daily practice for all the aches and pains, argues and dances, coughs and colds, inflammations and consumptions, fevers and chills, at the hour of birth, at the time of death, and at all intermediate points of life, to induce sleep, and to promote wakefulness, and for all the real and imaginary ills that come under the eyes of our great Aesculapian descendants.

Let us study the immediate effects and the remote results of the use of intoxicants, not alone in their physiological relations, but in their moral bearings as well, and we shall see that physicians can aid greatly in obtaining a prohibitory check to the direful evil. They can and should do much to prevent drunkenness in the generations yet unborn and those just in their infancy, by refraining from prescribing intoxicating drinks as medicine to *enciente* women and nursing mothers.

All recognize the easy transmission from mothers to children of different traits and peculiarities, yet some physicians will thoughtlessly prescribe, and women will as thoughtlessly drink these poisonous beverages, and then wonder why the little one grows up to be a drunkard.

When she who is to become a mother complains to her family physician of weakness and various bad feelings, he, thoroughly conscientious in other respects,

and a Christian man, perhaps, carelessly recommends a little brandy, a little bourbon, a daily glass of wine, or porter, ale, or stout to be taken with the dinner, and thus the embryo child is fed upon these intoxicants even before he is ushered into the world.

Again the mother who is nursing her infant tells her physician that her strength is gone, that her milk is poor and insufficient for the nourishment of the babe, and unhesitatingly, in many instances, comes the order that she shall increase its richness and flow by the use of beer or some other alcoholic compound.

The result is that the baby is never sober from the earliest period of its existence until it is weaned.

Medical men should take into consideration the physiological action of alcohol upon the human system with more thought than has generally been given it by the masses, and we should guard our prescriptions as carefully as we would those of any other poisons, which, in their places, are valuable adjuncts to our *materia medica*.

Did space permit, I should like to take up some of the leading diseases that come under the daily observation of the medical practitioner and analyze the effects of alcohol upon them.



## CHAPTER XXIII.

### ALCOHOL IN MEDICAL PRACTICE.

In years gone by the great majority of physicians leaned upon alcoholics as the sheet anchor of hope in

all emergencies in which a stimulus was required, regardless of the real physiological effects produced thereby. The practice became a general hobby and alcohol was played as the trump card.

No matter what may have been the necessities for the use of alcohol in the past, the best learned in the profession to-day are independent of it as a remedial agent, as there are now at hand various drugs with which the well-informed practitioner is familiar, that will give him all the beneficial results formerly expected from the alcohol family, without leaving behind them the direful effects that so often remotely followed alcoholic prescriptions.

The knowledge of these restoratives will enable a physician to tide over any case which alcohol could ever have done, leaving the patient free from any injurious effects of the remedy, no danger of alcoholism following, as so frequently observed in the past.

One thing I have for years observed, that many of the physicians using alcoholics as remedial agents were addicted to the use of the devil in solution themselves. Of course that could not be laid down as the rule, for there were hosts of conscientious practitioners who were using them for want of better weapons. *They* are always abstemious.

But to-day there is no excuse for taking the risk of the deleterious results for the little good that can be obtained, as we have no many other and safer remedies, excepting as indicated in foregoing paragraphs.

Medical men should avoid the use of devil water in their practice.

When such learned practitioners as Prof. N. S. Davis, Dr. Richardson and hosts of like men of re-

nown tell us they have found no disease that they cannot treat more successfully without, than with intoxicating liquors, it is about time lesser lights begin to look a little at what they are doing.

So long as there is a class of physicians who deal out whiskey and brandy to their patients, just so long will new drunkards be coming to the front.

Beer drinkers do themselves double harm, which spirit drinkers partially escape. Beer guzzles flush their blood vessels with the miserable slush, and in addition to the usual damaging effects consequent upon drinking distilled spirits they also get the wearing effects upon the heart caused by this deluging practice, which overloads the blood vessels and so often leads to diseases of the heart from the over labor thrust upon it, increasing its functional duties in the way of equalizing the redundancy.

Dr. Albert Day, superintendent of Washington Home, Boston, tells us he has treated nearly seven thousand cases of inebriety, and eight-tenths of them were the products of wine and malt liquor drinking.

Men are strange creatures and are ingenious in inventing excuses for evil practices. Were they as diligent in seeking for reasons for living abstemious, respectable, honorable and virtuous lives, what a different home this old world would be to us.

But lo, men drink for joy when the little ruddy young spueaker is born into the world, drink over the baptismal rites, drink over the marriage festivities, drink over the funeral obsequies, drink to keep out cold, drink to ward off heat, drink at the fountain of political success, drink over political defeat, drink to ward off disease, drink to drown sorrow, drink to

stimulate to deeds of darkness, drink for sociability, drink when they meet, drink when they part, drink privately, drink publicly, drink to arouse the animal passions, and God alone knows for what reasons the knight of the bottle does not drink.

Dr. Benjamin Rush says he has known many persons destroyed by ardent spirits who were never completely intoxicated during the whole course of their lives.

Every time one person treats another to a drink of alcoholics he is tempting him to become a toper, a guzzler, a drunkard. No one ever became a drunkard without taking his first glass, which led on to occasional drinking called moderation, then to inebriation.

Show me the drunkard of to-day and I will show you the boastful moderate drinker of not long ago. The moderate use of alcohol never rescued any one from the habit of drunkenness, but it has led myriads through the dark pathway down the road to ruin and damnation.

Drink ruins character, blunts intellect, changes industry into indolence, destroys family ties, makes wives widows and children paupers, incites sensuality and moral corruption, poisons the blood, degenerates the body, impoverishes the mind and damns the soul, and there is no crayon black enough to picture the darkness of the deeds that follow in its wake as the direct results of this world-wide diabolical curse, which destroys more men and women in this country in every half decade than our civil war did during its continuance.

Horace Mann once said: That some live long in spite of moderate drinking, no more proves the prac-

tice safe and healthful than the fact that some soldiers who fought through all Napoleon's wars are still alive proves fighting to be a vocation conducive to longevity.

It is a statistical fact that about one-fourth of the insanity of the present day is the outgrowth of the drink habit.

Again, if there be any one common result of the tap worship among the loungers of the groggeries it is laziness, both mental and bodily.

Where in the wide, wide world can be found more indolence and stupidity than among the daily guzzlers who loiter around the miserable licensed grog shops of the day? They are no places in which to look for brilliancy, they never brighten one's ideas, but the contra effect is produced. As well might you look for a horn from a Wall Street bull, or feature from the face of nature, as to look among such a company of loungers for increasing intellect, morals, refinement, purity of thought, industry or ambition.

Woe to the young man who allows himself to become a grog-shop loungeur. Dr. Adam Clark has said that strong drink is not only the devil's way into a man but it is man's way to the devil.



## CHAPTER XXIV.

### ALCOHOLIC DOSING.

Since the earliest period of time, error has combatted truth, and has often supplanted it. Error has



long been the leading feature in quackery applied to treatment of disease.

It is strange that in this enlightened day and age of the world that some so-called temperance people, bitterly opposed to alcoholic beverages because of their deleterious effects upon the human system, act as if they believe alcohol to be a wonderful panacea for nearly every ill to which flesh is heir, and often the only thing that will promote health in times of ailment or save life in the hour of dissolution.

To a great extent it might be supposed that the old practice of the medical fraternity had been based largely upon that theory, judging from their habitual stereotyped prescriptions containing alcoholics for nearly all the maladies that came under their notice.

The results of that thoughtlessness, carelessness, indifference, or ignorance as to causes and effects along those lines have been most dangerous and damaging.

But the medical profession at last has gotten its eyes open and science is eclipsing ignorance, and alcoholics are fast being abandoned by our leading practitioners.

The time has come when every layman even, should know that alcohol retards digestion, impairs the respiratory functions, lowers animal heat, mingles with the blood in its circulation and poisons its corpuscles, and lessens the vital forces of the body.

Hanging to the skirts of former days, ignorant mothers and nurses still resort to remedies containing a large per cent. of alcohol for all aches and pains or ills of any kind complained of, from the old grandfather in the family to the nursing infant.

One of the most baneful practices is that of using alcoholic remedies or medicines as family specifics. This practice, I am sorry to say, is prevalent even among some so-called temperance people.

Always having a stock of domestic remedies on hand well fortified with alcohol. As a medical man I look upon this as being one of the most pernicious provisions that can curse a family.

Of course it is very wise for mothers to have a few domestic remedies on hand, but they should scrupulously avoid all alcoholics, for at least two reasons.

First, *they do not arrest nor cure disease*, but do often accelerate it. Second, they do, many times, lay the foundation for future lives of dissipation.

Avoid quack nostrums, so many of which contain alcohol. The idea, for instance of dosing a babe with some kind of soothing compound which contains alcohol and crediting it with the benificent effect of quieting the little restless mortal and perhaps easing it from pain, when in fact it has simply made the baby drunk and he couldn't help being quiet.

What more than that? If the father be addicted to strong drink (or the mother), that will fan the latent inherited fire to a future blaze which may sear his soul and possibly end his life in a felon's cell.

Let nostrums alone and send for a physician who knows something outside of a brandy bottle.

#### LIFE INSURANCE AUTHORITIES

"The habitual spirit drinker," says a well written treatise on life insurance, "and especially one who was found to take strong drinks early in the day, ought to be declined altogether."

It declares in strong terms against insuring even

wine or beer drinkers, though the habit may not shorten life, as it puts it, but that almost any "degenerate condition of the body" may be induced by it.

None are more close observers than the medical experts in life insurance companies, and no physiologists are more careful in their deductions than those employed by those companies.

The results of their researches fully corroborate the opinions of others, to whose reports I make reference in these articles. Their observations are not confined to the male population, but they find what all medical men more or less understand, that the vice of dram-drinking exists to an alarming extent among females, and in many instances in the so-called best families.

Scarcely a well educated physician, who is not himself a drinker, can be found, but will admit that excess in drinking is a frequent direct and indirect cause of fatal illness.

Alcohol, in common parlance, seems to have an especial desire to attack and injure the nervous system, as we almost invariably find that portion of the anatomical make-up ruthlessly invaded by the deceptive intruder.

From an investigation on that point we find that while a little over fifteen per cent. of deaths in the population at large are produced by diseases of the nervous system and digestive organs, they cause something over fifty per cent. of all the deaths among the intemperate.

From the age of twenty-one to thirty the mortality in the upper classes exceeds five times that of the

general community, and in the next twenty years thereafter it is more than four times greater.

Physiological science reveals to us that while intemperance is the direct cause of great mortality, it is far less so than in its indirect influence in increasing the fatality of other diseases. No man with alcoholized blood can withstand any acute disease, as can a total abstainer. This is not a simple matter of opinion, but a well established fact, founded upon the closest scientific observations the civilized world over.

The victims of pneumonia, small-pox, yellow fever, cholera, and a long line of kindred diseases, when at all severely attacked, are almost always certain to succumb to their influence.

Nearly all the recoveries in epidemics of cholera and yellow fever, are among the non-drinkers of alcoholic stimulants, while the drinkers are more liable to their attacks, nearly as an hundred to one. Vengeance is mine, I will repay, saith the Lord.



## CHAPTER XXV.

“KNOW THYSELF.”

The above admonition was inscribed upon the oracle of Delphos by the ancient sages and philosophers.

How appropriately they can also be applied in this day and age of the world.

In these degenerate days, when man rushes headlong down the avenues of life as if God had created him of iron and steel, regardless of his beautifully

constructed organism, how befitting such a warning.  
"Know thyself."

There are few things of which we know less than of ourselves. Man is constructed upon the most perfect mechanical, chemical and dynamic principles.

All his mental, moral and physical natures are governed by fixed and immutable laws which cannot be trampled upon without the following of a penalty, from which there is no escape.

Men go limping, halting, hobbling along life's journey with diseased blood, diseased bodily organs, distorted limbs, their joints fairly echoing the crack of the champagne bottle that has brought them down to this untimely decrepit condition, their bloated faces, rheumed eyes, and livid countenances, indicating that they have not observed God's laws, but, as some writer says, have loaned their stomachs for a vintner's cesspool, or yielded it to the contaminating influence of the poisons of alcohol or tobacco. Oh, man!  
"Know thyself."

How strange are man's reasonings with regard to himself. He reasons, for instance—that alcoholic drinks warm him in winter and cool him in summer, and strengthen him for laborious exercise and exposure. If he knew himself as he should, he would understand the fact, that whenever alcohol in any form is taken into the system it interferes with the action of the heart and blood vessels, and thus with the natural arrangements in the body for equalizing its temperature.

While the beer or whiskey drinker is actually weakened by his drinks, the water drinker by his side is capable of doing more labor, and of longer indurance,

for the simple reason that in violent exercise, especially in hot weather, the body becomes internally heated, and but for nature's safety-valves being thrown open for the escape of perspiration, the worker would suffer and die.

The perspiration is simply the watery portion of the blood thrown out to evaporate upon the surface of the body and thus cool it. To keep up this supply in the blood, water must be taken into the stomach for absorption, thus providing for a free perspiration that must not be checked, which nature provides for comfort and safety.

The whiskey or beer drinker's potations irritate the blood vessels and heart, lessen the perspiration, and thus he cannot endure the heat with his water drinking comrade.

All know that the circulation of the blood is carried on by the action of the heart, and nothidg can be more beautiful and perfect than the rates of the heart's pulsations, and the respiratory movements of the lungs which are arranged to correspond and assist each other in their functional duties, and to regulate themselves to the necessities and demands for blood and air, more or less, being increased by day and reduced by sleep and quiet by night.

All this harmonious regularity is governed by a system of nerves called the *vasso motor* system, which are distributed all along the walls of the blood vessels to command contraction and expansion as requirements are made.

When a muscle is at rest it requires much less blood than when it is brought into active exercise.

The more blood that nature calls for the more is

the air that is required to supply it with oxygen, thus the heart and blood vessels on the one hand, and the lungs on the other, are adapted to the necessities of circumstances.

For health all this goes on with wonderful precision, and any interference with it does harm and throws them out of this regularity. So when alcoholic drinks are indulged in they are disarranging agencies by disturbing the action of the heart and relaxing the small, or capillary blood vessels which then become unnaturally distended with blood, especially in the skin. Thus the argument that it warms one so nicely.

Warmth and exhilaration are among the first effects experienced on taking alcoholic drinks; thus the erroneous idea that they really make one warmer.

That glow is simply the result of the small or capillary vessels of the skin becoming weakened and relaxed, allowing an undue amount of blood to circulate through those especially near the surface, so the feeling of warmth.

But in that change the internal portion of the body at the same time becomes cooled by the exchange and in a little time the temperature of the body is unequalized, and a sense of weakness and depression follows, especially in very cold exposure.

While the nervous system is at first keyed up, so to speak, it too soon lags with a like depression, and the drinker not infrequently suffers for his ignorant and foolish practice.

It is a well authenticated fact that abstainers can endure more fatigue, in any climate, than can even a beer drinker. In the frigid temperature of the arctic



regions it is so; in the sunny climes of the tropics it is so, and anywhere between those points it is so. Drinker, "Know thyself."

In succeeding chapters I shall more fully explain these pathological points under their appropriate titles.



## CHAPTER XXVI.

### AN HUNDRED YEARS—(NATURE'S LAWS.)

The nearer we live as nature seems to have ordained the nearer shall we come to reaching an hundred years.

No physiologist will deny that over-heating, stimulating, or irritating substances taken into the stomach will produce derangement of the whole body. Particularly does this apply to alcoholic stimulants, which irritate not only the mucus membranous lining of the stomach, but all the organs of the body, as, by absorption, they reach every fiber and poison them as they pass. As the consumption of the vital powers and increased arterial and muscular action are induced, the heart is called upon for extra work, and all the organs of the body are thrown out of harmony into discord.

At every such turn of the great wheel of our internal machinery an extra wear and tear of vital economy is an inevitable result. It is one barrier in the way of nature in her effort to carry out her own designs to continue life to its natural and fullest extent.

By careful living and perfect abstinence from all alcoholics, there is no reason why one born into the world free from hereditary taint should not reach the hundredth year, unless prevented by accident, in a bright and happy mood.

But a centenarian is a wonder, and should he reach ten years more he could draw a good salary in any dime museum as a living curiosity. There are some who live on to those ages, and almost without exception, they are found to be those whose systems have never been stung with the touch of alcohol.

In 1757 there died in England, a man in his 144th year. He had from boyhood been a laborer, until he became a soldier for some years. He subsequently returned to his native place and resumed his old occupation as a laborer. He never knew what sickness was until he passed his centennial. Eight days before his death, at nearly 144, he walked three miles.

The reason given for his long life, was his systematic living and total absence from alcoholics.

Later on it has been reported by best authority that very recently there lived at an Indian village in California, a number of Indian women who were beyond their 130th year.

Dr. Remondino recently reported a female Indian living in southern California, 126 years old, whom he has seen carrying six watermellons tied up in a blanket, a distance of two miles,

A few miles below Sandiago, was reported an old Indian who was thought to be 140 years old, out every day exercising. Another 115 years old, a great walker, who would walk fifty miles to the mountain to gather a bag of acorns. A missionary there who

knew him, vouched for their abstemious lives, simple living and strictly temperate habits.

In the town of my boyhood days, there lived a near neighbor, an industrious shoemaker; I knew him for more than forty years, he was hearty, robust, clear-complexioned, straight as a boy when he was in his nineties. Never drank intoxicants, seldom ever wore an overcoat even in mid-winter. I never knew him ill.

The last time I ever saw him, he was in a village seven miles from his home, where I then lived, on a bitter cold morning, having driven thither with a horse and lumber wagon, to take home some merchandise, coat not buttoned, no overcoat on, and I asked him why he did not wear one; he replied, "I am warm enough without one, I don't need one,"

I asked him how old he was, and with a pleasant smile I so well remember, he promptly answered: "I have passed my ninety-fourth year, hale and hearty as a boy." "Well," I said, "you haven't burned your stomach out with whiskey." Again, with a smile of satisfaction I shall never forget, he replied: "No sir, I never had any use for it, I let nature take care of my stomach and I help along by obeying her laws."

Oh! that every man would so live as to be a monument of prolonged life as a reward for total abstinence and correct living.

## CHAPTER XXVII.

## TOTAL ABSTENENCE SOLDIERS.

In the British army much attention has been given to the effects of strong drink upon the soldiers.

For experiment some divisions were allowed alcoholic liquors, while others were rigorously deprived of them, and in every instance the coolness, staying powers, vigor and watchfulness were greatly increased in the abstaining divisions. These results induced the War Department not to allow any liquor to be used in the soudan camp except for hospital prescriptions.

At one time Sir Herbert Kitchner forbade the use of intoxicating liquors among his soldiers and at the great battle of Atbara, when the English achieved such a glorious victory, the Highlanders marched across the plane in the face of the dervish zereba amid furious storms of leaden hail, over the scorching desert under that equatorial burning sun, calm, collected, in perfect order and with unbroken ranks as if out on dress-parade. Thus their brilliant victory.

All due to the fact that the drinks in that army, from the general to the drummer-boy, were restricted to tea and oatmeal water.

In the civil war in the United States, Gen. Dix, who was in command of New York harbor in 1863, found the death rate among his soldiers ran up to an average of 30 per cent.

With his keen perception he took in the situation and traced the effect to its cause, and without hesi-

tancy ordered that no rations of whiskey should be dealt to his men, when the mortality soon fell to 12 per cent.

In the Soudan campaign, alcoholic beverages were discarded by most of the commanding generals, and Gen. Havelock's brave soldiers exhibited masterly feats in their long marches and fights in the Indian Rebellion, with no whiskey rations, but simply on coffee as a beverage. Finally in the Soudan the Sirdar enforced prohibition of all alcoholic liquors. A large quantity, several hundred barrels of beer was sent in from Cairo by a trader, for speculative purposes, which was quickly consigned to the river.

The improvement in the appearance and condition of the soldiers was the subject of general comment, and the mortality from fever was greatly lessened after the exclusion of alcoholic liquors,

Rum rations were strictly prohibited in the Kaffir war of 1877 and 1878, and the good health of the soldiers was a surprise and was fully credited to the abstinence from intoxicating liquors.



## CHAPTER XXVIII.

### RIGHTLY BORN CHILDREN.

So long a licensed drink dives exist so long will children be born into the world wrongly constitnted, So long as children are begotten of tainted parentage so long will mankind be infected with drunkenness,

---

\*See Chapter 32.

idiocy, scrofula, cancer, kleptomania, syphilis and hosts of other inherited curses, verifying the law of God, that the sins of the parents will be visited upon the children.

That like begets like is a fixed law of nature modified only by education and the most favorable surrounding circumstances.

That inebriated parentage is one of the most fruitful sources, one of the worst pestilential hot-beds, one of the most rank and vile nurseries of these tainted, rotten and corrupt mental and moral curses that inflict the human family, observation and statistics bear uncontroverted testimony.

The following numerical compilation of tabulated facts was brought out by Professor Belman of Bonn relative to the career of a notorious drunkard, a woman, who was born in 1740 and died in 1800. Her descendants numbered 834, of whom 709 were traced from their youth. Of these, seven were convicted of murder, 76 of other crimes, 142 were professional beggars, 64 lived on charity, and 181 women in the line of descendants lived disreputable lives.

The family cost the German government for maintenance and expenses in courts, almshouses and prisons, no less than \$1,250.006, an average of a mere fraction less than \$1,500 each.

What a history for a mother, a grandmother, a great grandmother, etc. And yet hosts of similar instances can be found to-day, the frightful results of our accursed, vile liquor traffic.

That alcoholism of women plays an alarming role in what may be called artificial deterioration, reacting upon the proper development of the offspring; leading

to the lowering of the family stock, in common parlance, scientific investigations and observations have fully demonstrated.

Until the day when children can be born right, in the pure atmosphere of moral homes, from virtuous, abstemious progenitors, we cannot wonder at such results and must look for more to come.

A drunken parent is far more than likely to curse the world with drunken offspring. That inebriety is a legacy to children from drinking parents even to the second and third generation, and that few children of such parentage can be found who do not at least experience a craving desire for lipuor, is an indisputable fact.

Records teem with instances where whole families of boys and girls have become drunkards through inheritance from drinking father and mother.

Oh, for the purifying influence of model homes, the cradles of virtue. The very thought of a pure home in its highest sense thrills the heart with new aspirations and cheers the wayfarer in his lonely wanderings. How can a man desecrate his home?

An inherent thief will almost surely inflict upon society a thief or thieves in his offspring.

That the brain and nerve centers are strongly influenced by external causes, impressions that are life-long, more or less, forming a strong controlling power in shaping the lives of individuals, is a well known physiological fact.

Couple with those effects the surrounding, contaminating influences under which persons are likely to fall, weaknesses cultivated in the saloon of to-day, we can easily account for the alarming extent of drunk-



eness and licentiousness both in high and low society in these days of increasing degeneracy.

These facts by no means argue that drunkenness, thievery, etc., exist only as the result of heredity. Far from it; but they do establish the fact that if all children were born right, and carefully reared, it would go a long way toward eradicating these evil curses from the world.

Hosts and hosts of these unfortunates are to be seen daily who have acquired their habits from evil and corrupt associations, taking on new impressions that become indelibly stamped upon the brain and nerve centers and they are thrown into the same deplorable conditions as the former class, with their nerve batteries so changed by the constant influence under which they have fallen that they become adapted in every way to the new conditions, and over the borderline of safety they go. The time for decisive action has come. But

‘Deeper than thunder on summer’s first shower,  
On the dome of the sky God is striking the hour;  
Shall we falter before that we’ve prayed for so long,  
When the wrong is so weak and the right is so strong?’

It has become an alarming fact that both in this country and in Europe, the drink habit is fast increasing among the female population. In our country, saloons, and in Europe licensed confectioners’ shops are fitted up especially for female patronage. Among the lower classes in Europe, friends drop in to see each other socially and have a little chat over a cup of tea which is well charged with devil water which is available at the licensed grocers. So we see the demand is created by the supply, not the supply by the

demand. In some of our own cities palatial "drinking parlors" are fitted up in gorgeous array for tippling women to frequent. These increased facilities for pleasure drinking are fast dragging down our women, not by any means among the lower classes only, but among the higher and refined, and the medium classes between.

Under this condition of things God alone can tell what is to be the outcome of such a motherhood.

Already medical observers have discovered that drinking motherhood is the fruitful source of greatly increased infant mortality, at the rate of about two and a half times more than among children of abstemious mothers in the same ranks of life. Among the little survivors the vitality of the little dependents is very materially lessened. In the list of following disasters we find weakened minds, a lowered intelligence, enfeebled constitutions and not infrequently cases of idiocy, epilepsy and sometimes insanity, directly traceable to drinking maternity.

Another fearful result is often met by physicians in the lying-in chamber, dead-born progeny.

Druken conception is one of the most damnable results of liquor indulgencies. That parental alcoholism produces mental degeneracy in the issue is a well-established physiological certainty.

One other fact noted in a former chapter, should at least have a passing notice at this juncture. It is the wicked practice of nursing mothers imbibing alcoholics, the poisonous and deteriorating effects of which so often meet the eye of the physician, leading to nervous degeneracy of the little one as it tugs at the human beer bottle in the mother's bosom, leading to de-

fective nutrition and a host of entailed maladies and too often in later years, to drunkenness itself.

The procreation of offspring by drunken parentage not only entails the above-cited punishments upon the innocent children, but oftentimes throws them upon society as an incubus, sometimes of a dangerous character.

God has given man the world for his great harvest field and pleasure garden and endowed him with wonderful physical and mental abilities. Then are we not responsible for the well-borning of the little ones that Jesus said "suffer to come unto me?"

Woe to the people, or to the man, or to the woman who bids defiance to God's immutable laws or attempts to trample them under foot, or by yielding to the fiery impulses of appetite and passions, for they will hurl him into inevitable ruin.

The infant is born in blank ignorance, irresponsible for its condition, surroundings or inheritance. He is conscious of nothing save a few sensations, yet he is in direct relation with God, who has incorporated him into the realm of nature.

Could the female drunkard be suppressed the longevity of her offspring would be greatly increased. But so long as her habits of inebriety continue, so long in like ratio will her young be born into the world more and more degenerate.

The foetus in utero which is living and developing upon the blood of the prospective mother, cannot be well born if the blood is charged with such a diffusible poison as alcohol. That the germ plasma is affected by the poison to a degree of incomplete development of the offspring, is beyond contradiction.

A true mother is tender and careful of her offspring even in the embryotic period of its existence. If there be any one agency this side of the infernal regions, or in the realms of the damned, that can unfit woman for motherhood, it is rum.

That inebriety, like a hoard of diseases following in its wake, is stamped as an hereditary taint upon the drinker's progeny, is a thoroughly established fact, substantiated by the highest authority in this and other lands. The mother and the embryotic formation are so closely confederated in their circulatory existence that one may well wonder if a perfectly healthy child could be born into the world from a drinking mother, or on the other hand, as an offspring from a drinking father.

A drinking father or mother not only inflicts physical injury upon himself or herself, but entails enfeebled nerves, misery, disease and often premature death upon the innocent progeny with the added curse of a drinker's appetite. Thus children are born into the world devoid of the finer feelings which their birthright naturally demands, intellect clouded, effete in blood, with brain and mental qualities impaired. Thus the little innocent sufferer starts out in life handicapped in all its future natural avocations, because of its not being rightly born. Who can conceive of a greater curse in the eyes of God or man?

No wonder that childhood is dwarfed, depleted, weakened, diseased, abnormal and corrupt of blood, when ushered into the world by drinking maternity, or begotten by a drunken father. God's messengers and sentinals are ever at their posts of duty and every

edict is carried out and executed in obedience to His unchangeable laws.

In one of the hospitals of Switzerland it is recorded that forty-five per cent. only, of the children born of drinking parentage had good constitutions, while in total abstaining families the per cent. was eighty-two, and in the children of confirmed inebriates, but six per cent. were healthy.

Children not well born soon show their inherited idiosyncrasies in appetites, passions and general depravity.

Of all the agencies that corrupt the character in the budding time of life, blighting prospects and happiness, the fountain head is found in appetites and passions.

When we go back and read the history of the Moabites and Amorites, where the highest pleasures of the people were governed by appetite and lasciviousness, one almost feels a disgust for his own being.

Should we not be compelled to have our children well born? Their future, both in this world and in the next, depend largely upon pure birth and healthful education.

Oh, that we might elevate our race to bodily soundness, mental and physical purity, Intemperance and concupiscence procreate the vilest of sins and anti-manhood.

One of the surest safeguards toward the right borning of children is found in the carefully selected companionship in marriage. Oh! that every young man would turn a cold shoulder to every tippling young lady, and every young lady would resolutely discard

every drinking young man, and I would couple the use of tobacco with it.

How much misery and wretchedness is entailed upon the world by young women pooling their life interests with drinking men for the sake of being married. Each one thinks for *her* sake the young proposer will surely reform and stop drinking after the marriage day.

Deluded creature, has she not observed scores of just such cases and noted their disastrous terminations? She who marries a drinking man on his promise of reformation without at least one or two years of practical demonstration of strict abstinence, does not stand one chance in a hundred of becoming an abstainer's wife, but from observation in hosts of just such cases it is safe to say that she is more than likely to become the broken-hearted wife of a miserable drunkard, the pale-faced mistress of a comfortless hovel, probably the mother of little ones in danger of inheriting their father's drinking habits, pinched in their cold abode by the chill blasts of winter, poorly nourished and poorly clothed.

What a picture, young lady, but how true. Ask such a wife if he did reform for *her* sake, and your heart will yearn for her in her self-made misery. Young lady, beware of the pit while you are in retreating distance.

Often some old fellow is quoted as having been addicted to his cups fifty or sixty years and is hale and hearty to-day. That is considered a clinching argument that cannot be gainsayed. "Where ignorance is bliss it's folly to be wise."

Quite recently I read, I think, in the Quarterly

Journal of Inebriety, of a similar instance, that of a man over ninety years of age, an out-door worker, a farmer, who took life easy and drank whiskey most of his life, who was held up as a living example of its harmlessness. It was claimed that he had been in the habit of drinking a pint of some kind of alcoholic spirits every day for sixty years, had never been ill and was still apparently hearty and well.

The liquor journals flaunted his case before the public to prove moderate drinking a passport to old age.

So much was said about it that a physician instituted an examination into his history and that of his family. He reported that the man was below the average in intelligence, with a large physical frame and was very methodical in his habits of living. Truly his general appearance did not indicate any great physical change consequent upon his drinking habits. But when the doctor came to investigate the history of his offspring the devil in disguise was prominently manifest.

The man was living with his second wife. Of the first, three children were born, two of whom pined away and died in infancy and the third became an epileptic (which is a frequent result of drinking parentage) and died at the age of fifteen. The second wife bore him four children, "one is a feeble-minded, the second is choreic, the third is dissolute and drinks, the fourth is erratic, passionate and a wanderer. All are decidedly inferior both physically and mentally."

Truly the sins of the father are visited upon the children.

What a history; and yet the old idiot doubtless



prides himself on having been able to withstand the sting of alcohol for sixty years, never realizing the misery he has entailed upon his family.

I am confirmed in my opinion that inebriates and criminals should be debarred by law from marrying, and since drinking customs are so rapidly increasing among women I am more and more strengthened in my convictions along that line.

No man or woman should be allowed to marry without passing a rigid medical examination by a government official and obtaining a certificate of a sound, physical and mental condition and free from the habit of liquor indulgences. If found to be afflicted with insanity, epilepsy, scrofula, pulmonary consumption, syphilis or a remaining blood taint from former affliction, inebriety or any infectious malady, no certificate to be granted, and if marriage take place without such permit the parties to be punished for misdemeanor and the marriage contract be annulled. All convicted criminals to come under the same restrictions.

This ironclad requirement may at first thought seem a little arbitrary, but it is the only safety for future generations, and would be a great incentive to those criminally inclined (as Sam Jones says) to quite their meanness.

As it is a self-evident fact that all through nature, like begets like, it is a fearful thought that as sure as God is God, criminals beget criminals, scrofula begets scrofula, insanity begets insanity, idiocy begets idiocy, epilepsy begets epilepsy, syphilis begets syphilis, tuberculosis begets tuberculosis and inebriety begets inebriety.

Then in all candor is it right for any government to

permit propagation of such curses and allow them to be handed down to coming generations to benumb the electric brain, paralyze the nerves, poison the blood and honeycomb the bones?

Through such ungoverned channels has come our dwarfed and depleted race, half barren, blood tainted, abnormal, stunted and short-lived. Hence the increase in our world of suffering.

Horace Mann once said : "Individuals can debase individuals, but governments can brutalize a race." So it is as easily done by omission as by commission.

It is an historical fact that the average stature of the French people was lessened two inches by the taller of the men being selected for Napoleon's army and killed in war. The enervated, languid races of Spain and Italy and the dwarfed hordes of Mexico and India are the outgrowth of ancestral vices.



## CHAPTER XXIX.

### ALCOHOL A POISON, NOT A FOOD.

If alcohol be a food why is nature always striving so energetically, as physiologists find her to be, in trying to rid the system of it? The juices of the body play their part in flowing freely in an effort to weaken or dilute it, to prevent its drying effect upon the membranes of the body along its pathway. The veins are after it in full force to hurry it along, and out, the lungs, the kidneys, the pores of the skin, are all open and busy in trying to dislodge the intruder.

Food is digested and warms and vitalizes the blood while alcohol does not digest but lowers the temperature of the body. Food produces force in the body while alcohol is reactionary in its effects, and wastes force.

In all spirituous liquors alcohol is the intoxicating principle they contain, and its effects upon the bodies, which are, as David told us ages ago, "fearfully and wonderfully made," are various and far-reaching.

There are several varieties of alcohol produced from different substances, by distillation, but the common or ordinary alcohol of commerce, that which is obtained from fermentation of fruits and grains, is the only one connected with the subject under consideration, so far as I shall discuss it.

It hardly seems possible that a man of ordinary intelligence and observation could be found who would claim with any degree of earnestness, that alcohol is not a direct poison to the human system.

Alcoholic poisoning has been under observation, not alone by scientists, but by the laity, for centuries past throughout all Christendom.

Particularly in the last half century, since the investigations of the learned chemist, Baron Leibig, has it attained the careful attention of the world-wide medical profession.

How absurd the claim of Professor Atwater that it is an error to teach, without modification, that alcohol is a poison and not a food. Let us see a little whether or not this broad-cast assertion is well founded. In the first place, what is the literal meaning of the little word *poison*.

Webster gives its signification as "that which is

noxious to life or health." In still more simple language it could be said, that which is harmful or destructive.

But the Standard Dictionary gives a still more lucid explanation, that it is "any substance that when taken into the system acts in a noxious manner by means not chemical, tending to cause death or serious detriment to health."

Scores of references could be given to the experiments and researches of eminent scientists who declare alcohol a poison, with their reasons for so classifying it, embodying in many instances their understanding of what constitutes a poison ; but in a short article like this, only here and there one can be quoted, as for instance, Dr. Fick of Germany, Professor of Physiology in the university of Wurtzburg, tells us that "from an exhaustive definition we shall have to class every substance as a poison which on becoming mixed with the blood causes a disturbance in the function of any organ." That alcohol is such a substance he says, can not be doubted.

Does not alcohol cause serious detriment to health and furnish daily instances of its specific action leading to death? Medical literature is teeming with hundreds of pages of recorded instances of physical damage and premature deaths as the results of alcoholic potations, with uncontroverted proofs of its poisonous effects.

Professor Willard Parker said, "From no definition of a poison that can be found can alcohol be fairly shut out."

Again is not the daily observation of every thinking man, though he be not a descendant from Aescula-

pius, enough to satisfy his mind that man could not be so changed, unnerved, mentally unbalanced and physically wrecked by alcoholic beverages if they possessed no poisonous qualities?

That medical investigators have, in their researches found alcohol to be a poison, we find in their writings many records of their conclusions in unmistakeable language, as for instance, in Potter's *Materia Medica*, the following expression, "the action of that narcotic poison, alcohol, on the human system &c."

Dr. Alfred S. Taylor, lecturer on Medical Jurisprudence in that celebrated institution, Guy's Hospital, London, says. "A poison is a substance which, when absorbed into the blood is capable of seriously affecting health or of destroying life." These definitions are generally accepted by the learned, and out of the medical profession.

In Quains Medical Dictionary we read, "A poison may be defined as a substance having an inherent, deleterious property which renders it capable of destroying life by whatever avenue it is taken into the system," and it classifies alcohol among such poisons.

These facts are fully established by the investigations of hosts of scientists, medical and chemico physiological experts in this and other lands in years of study and experimental investigations, who tell us most emphatically that *alcohol is a poison* and in no sense a food.

Dr. August Forel, Professor in the University of Zurich, Switzerland, in which city I first met him, who is perhaps without a peer along these lines, declares that even in small doses, alcohol is poisonous in its effects, and many others of great renown declare

the same truth. For instance, Dr. Wm. B. Carpenter, the celebrated author of the "Principles of Human Physiology," says, "No one who is familiar with the action of poisons upon the living animal body, and has made the nature of that action a special study, has the smallest hesitation in saying that alcohol is a poison."

While admitting that it is in many cases slow in its action when taken in small quantities, it is nevertheless a slow poison in the great majority of cases but that he does not regard it any the less sure because of its slowness.

Poisons of course can be divided into at least three distinct classes, as irritants, neurotics or neurotico-narcotics and septics. In its varied poisonous effects, alcohol may be very properly classified under the head of irritants and neurotics.

An irritant poison is one which produces irritation with more or less inflammatory effect upon or within the parts with which it comes in contact.

A neurotic poison is one which manifests its damaging effects upon the brain and nervous system, which also embraces narcotics.

As alcoholics so manifestly exhibit their injurious effects in the way of irritating most of the viscera of the body, directly or indirectly, paralyzing and deranging the functional offices of the brain and nervous system, we may treat it as a double poison.

In all intoxicating drinks alcohol is the inebriating principle, and in autopsies the medical abserver has ocular demonstrations of the *irritant poisoning* effect upon the brain, stomach, liver, spleen, kidneys, heart, intestines, &c.

The congested state of one or more of these organs



in the body of a drinker is the common result of the poison imbibed. These organs are seldom found in a healthy condition in an habitual drinker, simply because of the poisonous effect of the alcohol imbibed.

In addition to the irritation imposed upon them, they often become hampered with an unhealthy fatty deposit recognized under the cognomen, fatty degeneration, to which I have previously referred.

That an ungovernable diseased appetite is cultivated for alcoholic stimulents by frequent quaffs at the cup is too well established to require the slightest comment, which fact is another added proof of the certainty of the poisonous nature of the drug.

Dr. Bevan Lewis, of England, classes alcohol second to no other poison in its character among the morbid affections and deteriorations of the bodily tissues, except that of syphilis.

That alcohol is so often used in astonishing quantities, for prolonged periods, and that men continue to live under the strain is no evidence that the effects are not poisonous, for like a thief in the night they often move slowly and unobserved in their dastardly mission, yet they are all the time playing their mischief like a hidden canker, gnawing at the vitals in their merciless attacks.

Is it possible that even the casual observer, and much less medical men should require the aid of the chemist, the physiologist and the special scientist to convince them of the poisonous effects of alcohol upon the human system.

The notable fact that Insurance Companies give great preference to total abstainers over even the occasional drinker is a patent proof that they have found



the former to be the longer lived, and those companies have investigated this subject most thoroughly.\*



## CHAPTER XXV.

### WASTE AND REPAIR.

Some one has said, "our body is a well-set clock, which keeps good time; but if it be too much, or indiscreetly tampered with, the alarm runs out before the hour.

So it is if cared for as God intended it should be, and it will simply wear out with old age, but if it be indiscreetly tampered with, as goading it on with alcoholics, it runs out before the hour.

That alcohol in the system is utilized or transformed in any way into food, force or caloric, is flatly contradicted and fully proven to be erroneous by the experiments of leading scientists all along down the decades for the last fifty years.

No article which cannot be utilized as, or converted into force or tissue, thereby helping to repair the wear and tear of the body, and assisting in its normal functional duties, can be classed as food in any possible way.

Our chemico-physiologists, with their eye of science, long since discovered that the human organism requires for its upbuilding and sustenance the following essential aliments, viz. : Fatty matters, sugar, albuminoid substances and water, with various salts in solution.

---

\*See Chapter 31.

So we find the very first food provided by an all-wise Providence for the young infant, the mother's milk, composed of just these necessities, and not one drop of alcohol is there to be found in it, except when the stupid physician orders the mother, or she volunteers to take it into her stomach in some form, when it soon finds its way into her lacteal secretion, poisoning the young infant's pure little system, which not infrequently creates a diseased appetite for the poison, and in after years ends in dissipation and drunkenness.

The albumen so necessary to human existence is found in the casein of the milk which furnishes the required nitrogenous element of food. So, as we trace these products along down through all the great line of animal and vegetable aliments, we find that in them exists nitrogen. To produce, or build up tissue growths, nitrogen is one of the essential requisites. That requirement alone precludes any claim to the food properties of alcohol, as no one will argue that it contains the slightest element of that ingredient. Yet we now and then hear of some one who has run off on a tangent with the delusion that alcohol is a food and a medicine. What a strange agency. Would any advocate of that theory claim both those great offices for it at the same time, or that it would act as a food to day and as a medicine tomorrow?

Has nature provided a separating machine in our bodies to divide the pretended ingredients of alcohol so that when food is required it can be disconnected from the medicinal part, and *vice versa*? Preposterous! Food indicates those nutriments that, when taken into the stomach, will nourish the body, sustain its force, repair its waste and generate heat for its existence.

Dr. Lees, who spent a lifetime in scientific investigations, says of alcohol: "It is foreign to the human body and its normal wants, one that never gives power like food, nor aids circulation like water, nor produces heat like oil, nor purifies like fresh air, nor helps elimination like exercise."

It arouses or agitates the nervous system, particularly those little fibers controlling the blood vessels by its power as a narcotic poison, also tends to the breaking down of the tissues and to general debility, while food products produce quite the opposite effects by nourishing, strengthening, building them up and repairing the loss or waste constantly taking place.

The wasting tissues must be kept in repair, which can be done only by supplying the same elementary parts of the wasting organs or tissues themselves.

As alcohol contains none of these elements it cannot in any possible manner be classed as a builder up or repairer in those every day changes, therefore it can in no way be counted in the lists of foods, but by its contra effects it again demonstrates itself a poison.

It generates fat and sends it around the body in an unhealthful manner, but it never creates or strengthens muscular fiber, but does impart weakness to it, the contra effect from that of food. This fact applies with equal force and adaptation to the nervous system which undergoes a like waste that must be supplemented with food, while the goading on to over-work of the nervous system by the sting of alcohol, perhaps causes even greater waste proportionately than that from the muscular portion of the body.

Again, when the blood becomes devitalized the tissues which are supported by it, always suffer. As our

bodies are constantly undergoing change of wear and repair, disease or bodily waste is inevitable if from any cause the material for supplying the waste is cut off.

Among the most damaging results of the imbibition of alcoholics including the frequent destruction of life, are those so distinctly manifested under the neurotic division of the poison upon the nerves and brain, trespassing upon the seat of intelligence and dwarfing manliness, dethroning reason, blunting sensibilities and faculties and unmaning manliness, often leading to paralysis, epilepsy, insanity and kindred maladies, not alone from their irritating, but from their neurotic effect upon the great nervous system.

So science has opened the way to us, and its warning voice admonishes us to "beware of strong drinks," the demon's poison.

Among the leading poisons in common use in medical practice are alcohol, belladonna, opium and its derivatives, strychnia, chloral, conium, atropine, arsenic, digitalis, some of the virulent acids, etc., etc.

Among them all alcohol is the most dangerous in its action, perhaps because it is the least feared and the most recklessly used, a flagrant fact however that fully demonstrates the scientists claim that it is a poison.

The action of alcohol is in direct contrariety to the renewal of waste tissue because of its deteriorating influence upon the blood, with its other damaging effects, or in other words, of its poisonous influence upon the vital fluid.

Nutritive substances are dissolved when taken into the human laboratory, by water preparatory to the yielding qualities, which alcohol entirely fails to do, and being antagonistic to water, always absorbing it

when brought into juxtaposition with it, thus retarding the dissolving process of the water, and by such suspension interfering with the nutritive process by robbing the blood of its requisite supply of chyle, is another proof that it does not aid in repairing wasting tissues.

No scientist has ever found in alcohol any flesh forming or reparative elements, such as glutenous, albuminous or nitrogenous properties so absolutely required for bodily nutrition which are always present in proper food substances, and must be furnished to repair the waste going on in the brain, nerves, bone, cartilage, etc.

In all my researches I have never found in any of the recorded observations or experiments of any histologist or analytical chemist, the claim that tissue repair or nutrition can possibly be accomplished without the interposition of nitrogen, an element of which alcohol is as devoid as a prize-fighter is of Christian piety.

Can any reasonable man doubt that alcohol acts as a direct poison? Will any sane man deny that the habitual use of even small quantities of alcohol produce injury, and that larger amounts are constantly causing the deaths of hundreds of thousands in this and other lands, and claim that its effects are beneficial?

Every physician has to battle against its ravages, and surgeons particularly have had their trials with it.

Why does the physician in cases of yellow fever, small-pox, cholera, crysipelas, pneumonia and kindred diseases in the persons of alcoholic imbibers universally declare an unfavorable prognosis and dread to touch them? Simply because he knows of the poison-

ed condition of the blood and the vital organs of such afflicted ones and the positive knowledge of the doubtful recovery in all such cases.

In cases of sever fractures with drinking patients why does the surgeon decline to apply the usual staying and supporting dressings instead of packing the limb upon a cotton or downy pillow?

Simply because of the poisoned state of the blood and the like condition of the secretions of the body of his patient rendering it hazerdous to apply any dressing at all tightly, in fear of unusual swelling, inflammation, etc. which he would not ordinarily fear in the person of an abstainer.

Why is it that he so often declines to perform a capitol operation upon a confirmed drinker that he ordinarily performs with perfect safety upon abstainers?

Why is it that injuries of apparent trivial moment to the abstatiner so often end in inflammation, erysipelas, gangrene, or septicsemia with those who indulge in the use of alcoholic beverages?

The single answer to all these interrogatories is that the system under such circumstances is so poisoned that recovery is doubtful, and the prognosis generally unfavorable.

Yet how often in cases of injury alcoholics are empirically administered to stimulate and to buoy up the patient when he is already stimulated and poisoned to a dangerous degree.

Why is it that young lads are so often stricken down and die after indulging in alcoholic draughts when they have not been accustomed to their use?

Because the drug has acted as an irritant poison, and they die as if asphyxiated with chlorform or poisoned with opium.



Such cases are of frequent occurrence. On October 19th last (1901) in mid-ocean, a German mother and five children were on their way over to America to join the husband and father in Illinois. One of the party, a boy of ten years of age, in some way got hold of a flask of whiskey and took it to his mother's cabin and drank the contents. He soon became unconscious. Why? Because of the narcotic influence of the liquor, and some hours later his mother found him dead from the influence of the narcotic poison.\*



## CHAPTER XXXI.

### ALCOHOL A DEPRESSANT.

Alcohol acts no part in the creation, growth, maturity or reparation of the human body, consequently its effects are contra to the principles of life, having nothing in common with it, except to poison, weaken or destroy it. It is itself the outcome of destruction and death of grains and fruits.

There are no known facts to sustain the vague theory of some, that if any portion of alcohol taken into the stomach is retained for a time in the circulatory system that it imparts strength or vigor, but on the other hand it manifests its effects in the same way as do anasthetics, by relaxing muscular tonicity in proportion to the amount of the poison taken.

Dr. J. J. Ridge who is high authority upon the subject says, "In the case of alcohol we have a *chemical*

---

\*See Chapter 22,



*poison* which produces an inevitable effect in proportion to the amount imbibed."

How frequently we see drinking men in a limp and intoxicated condition from this physiological change, the diminution of muscular power often accompanied with more or less loss of consciousness, sometimes to complete stupefaction, thus fully demonstrating alcohol as a sedative poison.

Again, Dr. N. S. Davis says, "Alcoholic drinks are poisonous in the same sense as are opium chlorform, etc., and should be sold only under the same laws as such poisons."

One of Professor Atwater's conclusions is that alcohol protects the body material from consumption just as effectively as corresponding amounts of sugar and starch."

Strange theory to promulgate in the light of the science of to-day which teaches with unmistakeable proofs that all the organs of the body are damaged by it.

That food is a builder up and supporter of bodily tissue, while alcohol is so positively a tearer down and damage to it, that nothing can be called a food unless it can enter into and assist in sustaining life, in which the leading scientists of the age in all lands are agreed, who declare to us that alcohol does not come under that class of agencies, seems sufficient proof alone to establish the fact that alcohol is not a food but is a poison. Examine any of the organs of the body of a confirmed drinker and we are confronted with the indellible proof of the ravages of alcohol.\*

Its effects upon the lung tissue, for instance and the nerves supplying the same, has led some writers very

---

\*See Chapters 13, 27, 32 and 39.

appropriately, I think, to also denominate it a "*respiratory poison*."

Again, how often the medical practitioner meets with *Toxic Amblyopia*, or weakness of the eye-sight as one of the common results of the toxic poison of alcoholic beverages. And just here I am reminded of the same result often produced by the use of tobacco, so closely allied in its symptomatic appearance and effects that it is sometimes difficult to differentiate them. Indeed the two causes are often combined in their effects in the same individual.

Dr. John Bell an eminent author, declares alcohol not a food, but a poison, and that every writer on toxicology so regards it, and as such it is classed among the narcotic poisons.

That alcohol, like chlorform, is an *irritant narcotic*, a depressor of muscular, or nervo-muscular power, that it is a general disturber of the functional arrangements of the various organs of the body, disorganizing and wasting their vital forces are well established physiological facts.

To put the question in the mildest form, the testimony of hundreds of thousands of abstainers in different quarters of the globe, is that people are more able to endure the fatigues of life without than with the use of alcoholic drinks, conclusions actually arrived at by careful comparison of the two classes under like circumstances.

Life Insurance statistics show that the health of total abstainers is one half better than that of moderate and free drinkers, and that it is one third better even, than that of moderate drinkers.

Sir Ramsden Slader, Physician General of Madras,

who had much experience in the tropics, said, "I have enjoyed an uncommon share of health : but I find I can go through bodily and mental exercise *much better* when I abstain altogether from alcoholic or fermented liquors."

Baron Leibig says, "Beer, wine, spirits, etc., furnish no element capable of entering into the composition of blood, muscular fibre, or any part which is the seat of the principle."

Dr. F. R. Lees, F. S. A. says. "The end of food is the generation of force, with which man performs the work of life, but the possible methods by which food can generate power are only three : 1st, by the organization of tissue, 2d, by the supply of chemical ingredients of the blood ; and 3d, by furnishing fuel for oxidation and the consequent production of heat.

It is now seen that alcohol can do none of these things ; it cannot make tissue, nor supply salts and phosphates, nor feed the furnace,\*\*\*\*. Alcohol, then contrasted in all its physiological properties with water, cannot rationally be regarded as drink, any more than food, etc." He further says, "It has been shown, by a series of *facts* that health, strength, warmth, endurance and vital power are all best upheld by abstinence from alcoholics, and that moderate use of such liquors actually and sensibly increases the mortality. This proves by experience," he says, "that alcohol is not food, but a poison."

Alcohol a poison? Yes! a teaspoonful of ardent spirits has often sacrificed the life of a child, and men unaccustomed to its use have been killed by it. Why, because it was a food? Oh no! but because through its narcotic poisonous action it produced death by *nervous shock*.

As I have previously shown, alcohol readily finds its way into the blood, impoverishing it, without itself undergoing any chemical change, and before it is eliminated by the skin, kidneys, lungs, etc., setting free fatty and other matters, diverting the oxygen of the blood and causing the retention of waste matter, urea, etc., which ought to be carried off from the body, attended with general depression of the nervous system, etc.

The use of alcoholics with young infants for their narcotic effects, often produce hydrocephalus, or dropsy of the brain.

The laws of our being are not so complicated that the learned only can have a comprehensive idea of them but the every day observer must of necessity become, to no little extent, familiar with them. They are so simple and philosophic that even children can be taught to understand them. Thus the wisdom of teaching the laws of health and the pathology of intemperance in our public schools in the budding time of mental development, there being no more important period in our existence than that of childhood and youth.

That our lives are so blighted with disease, that we are afflicted with so many aches, cramps and pains, so many fevers, agues and dances, and such a long vocabulary of maladies is proof positive that there is something radically wrong in our habits and modes of living. What a contradiction to our boasted intelligence and refinement.

How perfectly nonsensical it is for us to live such artificial lives as we are doing in this fast thoughtless age, that the practice is not simply inviting disease but is really offering a premium for it, and before re-

aching the meridian of life we are in the throes of old age. All because of the stupidity and ignorance in reference to the laws of right living, or if understood, because of our blind slowness of apprehension and indifference in reference to our physical care.

Is it possible that man can be so stupid as to forget he has a body for the well being of which he must care, according to the laws of nature as God has ordained? Does he think it will run on automatically and need no care on his part?

If so he is blind indeed and will reap the bitter results of his stupidity. For many years I have devoted much time to the study of the effects of alcohol upon the human body and mind and have closely followed the recorded opinions of the leading learned and noted professional confrères.



## CHAPTER XXXII.

### ALCOHOL OPPOSES FORCE AND ENERGY.

In the days not long since passed, how almost universal was the thought that man's physical power for endurance was enhanced by the aid of alcoholic stimulants. And some are still so ignorant of the physical laws of nature as to cling to the same delusion.

They do not stop to consider that the human body can no more undergo the prolonged strain of physical and mental labor without trespassing upon the vital energies than can an engine run indefinitely with no care for its wear and tear.

They give no thought that alcohol instead of building up, repairing and strengthening the human machine, is an intruder, a hinderer, an opposer to the natural laws that govern it, that the nerve power for inciting to action and muscular force to perform and endure must have reparative supplies for replenishing the loss of vital energy and building up the wasted tissue, and that alcohol in its effects is diametrically opposed to such recuperative process.

The incitement produced by alcohol is only temporary and is mistaken for increased muscular power, when in fact it simply stimulates or goads on the muscles, through the nervous system to increased activity but not to muscular tonicity, but actually diminishes their power of endurance, thus the reason why laborers, athletes, arctic explorers, boat racers, soldiers in the army and many who use oatmeal and water, or indulge in the moderate use of tea or coffee can endure vastly more than those who resort to the use of alcoholic beverages.

This is no dream of a fanatic, but a thoroughly authenticated fact arrived at by repeated practical tests and observations in different lands, attested by thousands of participants, especially in the British Army.

Dr. Richardson says, "I would earnestly impress that the systematic administration of alcohol for the purpose of giving and sustaining strength is an entire delusion. That this spirit gives an increase of power by which men are enabled to perform more sustained work is a serious mistake."

Sir Andrew Clark, M. D. has said, "For all purposes of sustained, enduring, fruitful work it is my experience that alcohol does not help but hinders it. I am

bound to say that for all honest work alcohol never helps a human soul. Never! Never!\*

A few years since a very valuable book was published, entitled "Study and Stimulants," in which was recorded the testimony of 132 men prominent in the literary world, not one of whom resorted to alcohol to stimulate his brain nor to strengthen his thinking powers. The author said, "Not one resorts to alcohol for inspiration."

The "Cyclist's Route Book" says, "Alcoholic drinks should be avoided; they prevent good work being done"

The claim that alcohol furnishes nourishment is a fallacious idea, as it has no power except to lessen the feeling of hunger in its action as a neurotic or narcotic poison. So it becomes self evident that it neither imparts nourishment, strength nor warmth.

Dr. N. S. Davis says, alcohol is neither a food nor a generator of force in the human body. He also says, "No form of alcoholic drinks is capable of either warming, strengthening, nourishing or sustaining the life of any human being."

Dr. R. Green tells us that alcohol is neither food nor medicine, nor does it supply force, but lessens it.

Dr. Richardson says, "The idea of alcohol giving force and activity to the muscles is entirely false." Again he says, that "those who abstain from alcoholic drinks are stronger and warmer than those who indulge in their use."

Why does a tired man think he feels refreshed after a drink of liquor? Simply because his nerves of sensation are partially paralyzed for the time being and he is deceived thereby and his body pays the penalty



by keeping him longer in recuperating from his fatigue.

Not because the tired feeling is removed, but for the reason that the sensation is temporarily impaired or cut off. Just so it is with hunger which seems to be appeased, but the same cause governs that sensation also. This too is another evidence of the poisonous effect of alcohol.

In Dr. Richardson's writings we read of some very interesting experiments he instituted in his scientific investigations along these lines, among them his test for weakening power of alcohol, demonstrated upon the leg of a frog.

To the hind leg of a frog he suspended a weight carefully adjusted, then applied electricity over the muscles until he obtained the fullest possible contraction of them, thus demonstrating just how much these muscles are capable of raising. Then he administered alcohol and applied electricity as previously noted and he found the responsive contractions became less strong and more and more feeble as the narcotico-poison took effect, until less than half the weight could be raised that was previously lifted before the alcohol had been administered.

It is a well settled fact that even the moderate use of alcohol lessens the total physical energies of the human body. If alcoholics are taken into the stomach at all they should be administered by the specific direction of an intelligent physician. They should be prescribed and administered scientifically as any other poison would be used as a remedy, in specified doses of uniform strength.

The medical man in prescribing any of the branches of the alcohol family, as rum, brandy, gin, whiskey,

wine, porter, stout, etc., without specifying the particular brand desired, has no knowledge of what his patient will get, for all sorts of slops and compounds are palmed off upon the public under those heads as pure liquors.

As much care should be exercised in prescribing alcohol as in case of any poison, when a specific brand or chemist's name is attached to the prescription. This may seem to be an unusual precaution ; and so it is and I wish it were not necessary, but to me it is a very important one.

The tonicity of the heart like that of the blood vessels is governed by nerve regulators, so when that control is impaired by the neurotic poisoning effect of the alcohol through its paralyzing power, the heart runs riot, beats more rapidly and the arterial force being lessened, the blood is unduly rushed through the body, imperfectly re oxygenated, and much of the effete matter along the way is not taken up and carried to the bodily scavengers as nature designs.

This fact is also the key note to the explanation of supposed increased bodily heat that drinkers claim to experience. But the physiological rationale of the change is, that bodily heat is sustained by food, which in the animal economy is the generator of caloric, while alcohol acts in a way to counteract that process to quite a degree.

For instance, the effect of alcohol in the circulatory system is to partially paralyze the nerves of the blood vessels, thus diminishing their contractile power, dilating and weakening them, which result allows a greater and abnormal flow of blood which contains heat, to the surface of the body through the weakened ves-

sels for a brief period, while at the same time it interferes with and lessens the natural chemical changes within, changes necessary for the generation of heat, causing the internal temperature of the body to be more correspondingly lowered.

To generate the required heat and energy for the promulgation of life, foods that will readily oxydise, such as butter, cheese, oil, fat, starch, sugar, etc., as stated in a previous article, must be supplied, and the process is greatly retarded by the use of alcoholics, and often the tissues are so broken down by the poison that the damage is irreparable.

Man is not born in strength but he is the emblem of weakness, yet if he lives and moves in harmony with the physical universe around him, God will bless him and prosper his good works. But woe be to him who sets himself against the invisible chemistry of nature's laws, for it is fixed and unchangeable.

Man given over to appetites and passions is the most degraded being that beastializes the earth, his concupiscence and present sensations are his only heaven or his only hell,

The moral and religious universe seems of little account to him in whom temperance and licentiousness runs riot. I have no desire to go into a rehearsal of the *Dead Seas* of those physical abominations.



## CHAPTER XXXIII.

### BEER-DRINKING.

The early advocates of total abstinence, with no eye to science, arrived at the conclusion that the only pan-

acea for drunkenness and prevention of the danger of falling into drinking customs, was total abstinence from all intoxicating beverages. How fully time and science have verified these wise conclusions.

But from time to time some wiseacre or would-be philanthropist, and indeed an occasional oracle of some repute starts up with a flourish of trumpets to persuade the world that the long line of noted scientists who have contributed so much for the amelioration of the rum slaves are all off in their deductions.

But the arguments and experiments of these new luminaries have failed to convince the thinking inquirers of the avowed correctness of their theories. The moderate drinker of to-day consoles himself that the wise thing to do is to largely shun the stronger alcoholics and confine his potations to that harmless beverage, beer, on the oft-lauded theory that it is nourishing and healthful.

What are some of its healthful blessings manifested upon the human system? One of the first is to increase the size of his stomach to a capacity for a goodly round of drinks all day. Of course it is correspondingly weakened for its ordinary functional duties, but no matter for that if its reservoir capacity is sufficient for the daily storage, so we find every habitual beer-drinker's stomach abnormally enlarged, as any one can well judge from the amount of slops often quaffed.

A witness in a case of violation of the excise law for selling larger beer without license, was asked if he were an habitual beer-drinker, and he answered affirmatively. He was then asked how many glasses per day anyone could drink without feeling any intoxicating effects "Well," said he, "I cannot tell that for I

never drank over fifty or sixty glasses in a day, but I suppose if a man went on and made a hog of himself he might get too much." The next damaging effects are upon the kidneys and liver, so often followed by Bright's disease, or enlargement and softening of the kidneys, or an equally alarming change in the liver, by enlargement, fatty deposit, or dotted with little hardened points like nail-heaps, which is called the hob-nailed or drunkard's liver, and in addition to these, a long line of other diseased viscera are developed from beer drinking.

Physicians and surgeons all agree that a beer-drinker is a hard subject for a favorable prognosis under medical or surgical treatment for any injury or malady. Tell any physician that his patient is an habitual beer-drinker and he will shrug his shoulders and draw a deep sigh, wishing the patient had not fallen into his hands for treatment.

It is difficult to find any vital organ in a beer-drinker doing its work as nature designed it should. That is the reason beer-drinkers are so often snapped off suddenly.

It is not to be supposed that there are no damaging results because we cannot always trace them. One writer says: "The idea that because you stop before you stagger, the system takes no note of the damaging material you put into it, is a ruinous delusion."

One thing is physiologically certain, that a healthy person does not need artificial assistance to sustain him, even if he could find sustenance in beer. Beer or any other form of alcohol contains little or no sustaining element, but on the other hand it is a depressent, lowering the condition of the system below the stand-

ard of health just in proportion as it primarily stimulates or excites above that point.

Such abnormal changes cannot long be endured by the human system but damaging results are to follow, such as impaired nutrition, weakening of the nervous system, debility of the vascular organism deranging the heart's action and the circulation of the vital fluid, etc.. etc.

Thus the beer-drinker does not stand an equal chance with his abstemious neighbor for recovery from any disease or injury.\*

For more than a quarter of a century beer has been coming to the front (abdominal appearances verifying the statement), as a partial substitute at least for stronger alcoholics. It is argued by some that it is a healthful substitute and an aid to nutrition. Let us stop a moment and analyze that theory.

There is less than an ounce of swilled extract of barley in a gallon of best beer. Why? Because fermentation is the result of the death of the grain, and fermentation must take place to produce swill beer, and to bring about that result, almost the entire nutriment has been driven out by the sprouting, rotting and malting of the barley from which the beer is obtained.

The nutriment is so nearly all destroyed or driven out by that change that a man would starve to death drinking beer in the hope of nourishing himself.

Deluded drinkers force themselves into the belief that as beer fattens it must nourish. Fat in superabundance is not health, but disease. It means unhealthy blood, unhealthy juices, unhealthy muscles and unhealthy organs generally.

---

\*See Chapters 11 and 13.

Alcohol always renders the blood more or less impure and diminishes its capability of eliminating the general impurities of the system. When the blood is in any way interfered with and changed into an abnormal condition it becomes incompetent for performing its eliminating functions, and the waste matters accumulating have to be disposed of in some way, thus their deposit upon the different organs of the body, in and around the muscles in the form of fat, and if increased to any considerable extent it is an indication of disease.

One of the leading exciting causes of this derangement, known as fatty degeneration is the action of alcohol upon the blood exhibiting its results upon the various organs of the body in the deposits just indicated, which are always debilitating.

Beer, producing fatty degeneration is a disease producer. So the bloated, blinded beer-drinker is a traveling monument of distorted, diseased and deluded humanity. The whole system becomes degenerated and brought into a proper condition for an attack of disease of any nature. That is not all; the intellectual and moral faculties are also impaired, and the beer guzzler is in great danger of becoming anamalized, sensualized, and some times brutalized.

He is every day lessening his capability of resisting disease, and indeed his beer is the enemy that invites and encourages diseases and shortens life. A corpulent beer-drinker has a very feeble hold on life when attacked with almost any disease.

Among the visitations incited by beer to the systems of such drinkers, are Bright's disease of the kidneys, diabetes, fatty degeneration of the kidneys, liver, spleen, heart, blood vessels, the tissues in and around the muscles, and the brain, if he have any.



Many more deaths are reported every year in these times from heart and kidney diseases than were known before the use of beer became so prevalent, and the great majority are among beer-drinkers. Beer is one of the greatest inciting causes of these diseases. It is indeed more certain in its ultimate results than any of the other alcoholic drinks of the times.

Beer-drinkers are the play grounds for diseases. A man may be a picture of health in the eyes of the unsophisticated to day, and yet be so diseased that he dies to-morrow of beer poisoning.

When the fingers of bartenders become so diseased by their contact with beer as to cause their severance from the hand, as frequent reports are showing us, what must be the condition of the internal organs of stupid idiots who loaf around the saloon, saturating themselves day by day with the vile compound?

A year or more since the "International Magazine" published a statement credited to the "New York Mail and Express" setting forth the following statements upon this very point. In my own language I reproduce them here.

The attention of hospital surgeons was called to the fact that bartenders had lost several fingers of both hands within the past few years. The first case mentioned was that of an employee of a Bowery concert hall. Three fingers of the right hand and two of the left were rotted and sloughed off, when the sufferer called at Bellevue asking the reason for his affliction. He explained that his duty was that of drawing beer for the great crowds who visited the garden nightly.

With the exception of this malady he seemed to be in good health. The diagnosis was, that the beer he

had handled had "rotted off" the fingers. Many other cases of like character have been discovered since. There is little doubt, judging from what I have seen published of such instances that there are hosts of just such cases in the primary and more advanced stages of that malady. The resin and the acid are said to constitute the cause of the ailment.

The article referred to also states, "The head bartender of a well-known down-town saloon says he knows a number of cases where bar-tenders have, in addition to losing several fingers of both hands, lost the use of both members." Beer, he said would rot leather, and that it was "impossible to keep a good pair of shoes behind the bar." What a record.

Is it any wonder that men's stomachs will fail and lose their functional powers, when their fingers and old shoes cannot stand the contact of the vile compound?

The majority of excessive beer-drinkers become corpulent, loaded down with fat, a pretty certain passport to untimely graves.

Again, beer drinking mothers clasp their nurslings to their breasts unmindful of the danger to which they are subjecting their little ones. The curse of curses of to-day is the use of beer at the family table. In many circles, little children are forced to drink the bitter draught, quite to their disgust, but they soon learn to like it.

Is there any thing more devilish than for parents to compel their children, or even allow them (as is often the case) to drink from the beer pail in the home circle? In our cities this is a common occurrence, and the little ones are forced to sip at the family beverage, at first repulsive, but finally the appetite becomes diseased,

and thus the early cup often leads to inebriety, and too often to premature death.

Compared with inebriates who use different kinds of alcoholic drinks, the beer-drinker is more generally diseased and nearer a state of incurability. The daily use of beer gives the system no chance for recuperation and steadily lowers the vital forces.

Let beer drinking continue for another quarter of a century and make it obligatory that the cause of death shall be inscribed on every tombstone of the dead drinkers, and we should see staring us in the face at every turn in every cemetery, inflammation of the liver, inflammation of the kidneys, inflammation and softening of the stomach, softening of the brain, paralysis, Bright's disease, diabetes, fatty degeneration, apoplexy and a host of kindred diseases.

What a commentary that would be, that beer drinking had transformed our cemeteries into the great medical lexicons ! The moral, young man, the moral.



## CHAPTER XXXIV.

### BEER FATTENING.

It is surprising how many there are who not only think the indulgence in beer drinking is not harmful but is oft-times highly beneficial, recuperative and healthful, when the truth is, it is harmful and poisonous in that its exciting principle is alcohol, and to the extent of that drug contained in the beer, to the same extent it is poisonous just in proportion as it is the poi-

sonous ingredient in other liquors, like rum, brandy, whiskey, gin, wine or cider, and like those beverages it is not a food, as it contains none of the elements for creating or repairing bodily tissue. "But, "you ask" is it not made from grain which is highly nutritive?" O Yes. but the nutritive element in the grain is destroyed in its conversion into beer so that it is completely robbed of its food properties thus leaving the beer simply water and alcohol.

"But, do not people, as we say of horses, thrive and get fat on it?" No, they do not thrive on its use though they do accumulate fat. Did you consider the quality of that fat? It is not muscle nor healthy adipose matter, but simply fat, in the broadest sense of the term, not a healthy deposit, but disease.

That is so from the fact that the alcohol it contains interferes with the circulation as explained in other chapters, so that the elimination of waste matter is not perfected, but it accumulates in all the by-ways or interstices of the body in form of fat, made up from the accumulations of effete matters, and in that way poisoning the system.

How often we see on our streets, bloated, puffed up, walking human beer tubs who feel a boastful pride over their corpulence, imagining it to be an emblem of health, but when attacked with any acute disease they soon shuffle off their mortal coil.

I have a vivid recollection of a young man, prosperous in business, weighing probably 165 pounds in health, who took to drinking, and finally confined his potations mostly to beer. His face soon threw out the red flag of danger, he began to accumulate fat until it became laborious for him to walk.

He lived a half mile from the cluster of grog shops in his town, and the distance was finally too great for him to walk, so every morning after breakfast his servant drove him to the drinking places in a carriage and returned for him at dinner time and again in the afternoon took him to one of his drinking lairs and called for him at night.

His fat increased enormously, so much so that it became difficult for him to enter or alight from his carriage.

He was a bloated sight to behold. I watched him from day to day, simply as an observer, and finally the news came that he was ill, and just as I expected, the next message informed us that he had succumbed and bade farewell to earth and all its charms.

I have another just such case under observation at the present time, a bright young man with every opportunity for a useful and prosperous life, but alas he too is going down.

Widespread is the belief that alcohol is really strengthening and health producing because men so easily fatten upon it. Stupid indeed is that reasoning, as that is really one of the most confirmed arguments that its effects are damaging and poisonous to the human economy. There is nothing that so decidedly lowers man's vitality and weakens his power of resistance as alcohol.

When we iterate the truth that alcohol is more or less a damage when received into the system we do not restrict it to any particular form of intoxicating beverages but find it just as damaging, proportionately when taken in beer, wine or cider.

In beer an additional injury is inflicted by the en-

ormous quantity so often taken, creating a permanent over distention and weakening of the stomach, as formerly noted.

But there is still another important fact almost universally overlooked, which is, that beer-drinkers though not so often intoxicated, actually consume more alcohol than do those who use stronger drinks, because of the great amount of beer consumed and the more continuous imbibation of it, keeping up a constant supply of alcohol in the blood, giving nature very little time for recuperation, consequently the tissues yield and diseases supervene.

No matter in what form or in what receptive vehicle alcohol is introduced into the stomach, it is the active intoxicating principle which in ale and porter there is from six to eight per cent, in wine from seven to eighteen per cent, and in brandy and whiskey from thirty to forty per cent.

Those who abstain from these drinks live longer, enjoy life better, can stand more fatigue, endure greater hardships, resist a higher degree of heat, and a lower degree of cold than those who resort to their use.

They have better balanced minds, a greater degree of mental acuteness, keener perceptive faculties and more delicate sense.

God made man with so great a degree of physical perfection that he has many marked points of beautiful development, all of which suffer and fade under the ravages of the intruder, alcohol.

To retain his pristine elegance, man must necessarily obey the laws of nature. Emerson says, "The beautiful rests on the foundations of the necessary."

George McDonald has said, "I want to keep you as beautiful as God meant you to be when He thought of you first." How can he expect to retain it under the use of intoxicating beverages, when it is so clearly proven that alcohol lessens muscular tonicity and nervous power, and in extreme cases under its poisoning influence completely extinguishing them.

Baron Leibig says, "Beer, wine, spirits, etc, furnish no element capable of entering into the composition of blood, muscular fibre, or any part which is the seat of vital principle."

Does alcohol contain any solid matter requisite for food? Does it furnish any salts or iron for the blood? Has it *any* constituent which is a tissue restorative? Science answers, it has none of these elements in any form. Alcohol does not supply any of these important and necessary elements of life.

In the early days of the reform movement, from a medical standpoint, Dr. Benjamin Rush gave it a great impetus with his scientific researches, and published to the world the results of his investigations on the effects of ardent spirits, in which he said, "It would take a volume to discribe *how much* other disorders, natural to the human body, are increased and complicated by them. Every species of inflammatory and putrid fever is rendered *more frequent and more dangerous* by the use of spirituous liquors."

His arguments, founded upon physiological investigations, were sledge-hammer blows against the theory of the dietetic properties of alcohol.

This opened the way to the thorough study and experimental explorations which have since followed, and through which the world is becoming enlightened



along these lines, so that the thinking ones of the times are discarding the use of intoxicants, thereby beginning to lengthen the duration of their stay upon this mundane sphere.

It is a well authenticated fact that the use of any poison for a time, calls for an increased quantity to produce the longed-for effect, and all the narcotic poisons, including alcohol, by their debilitating and exhausting power upon the nervo-muscular system conduce to excite the craving, and so frequently the uncontrollable appetite, especially for alcoholics, amounting oftentimes to absolute frenzy for their stimulating, exhilarating, or narcotic effects. Under their use the will is weakened and made subservient to the diseased appetite until some are quieted, while others are transformed into excited, brutish ruffians with reason dethroned under the charms of the insidious deceiver. So science lifts its warning voice against the use of alcoholics under the delusion that they are foods, and demonstrates that they are poisonous in their effects upon the human organism. "Beware of strong drink."



## CHAPTER XXXV.

### FIBRIN IN THE BLOOD.

Man is a noble being, and God so created him, and for his enjoyment and benefit God made the world with its magnificence and beauty, and breathed His own

---

\*See Chapter 30.

breath of life into his nostrils, and the morning stars sang together for joy. Yet how man has beastalized himself for the gratification of appetite and passions.

One important physiological fact not previously dwelt upon in this series ought not to be passed by without further comment; that as old age approaches, vitality becomes more or less enfeebled by a natural diminution of oxygen in the blood corpuscles, consequently less carbon is thrown out by expiration.

In like manner alcohol acts upon the human economy by inducing drowsiness, lethargy, a sort of lackadaisical feeling, thus, for the time being converting youth or young manhood into old age.

Still another among the many physiological truths not having been sufficiently considered, I beg to note here. In fact a number of changes which the blood undergoes in those who drink alcoholics have not, because of the brevity of these papers, been sufficiently enlarged upon, notably the one in mind, a very potent one, the diminished power of coagulation.

One of the important components of the blood, is "*fibrin*:" which, when brought in contact with the air forms a coagulum or clot of a flesh-like appearance.

When blood is drawn and exposed to atmospheric influence the fibrin separates from the watery portion or serum into this coagulated mass.

From this semi-solidifying of the fibrin when thus exposed the blood has been denominated by some as "*liquid flesh*."

In slight wounds nature arrests the hemorrhage by solidifying or coagulating the fibrin of the escaping blood, which seals the wound over, acting as nature's safety compress.

In the lower animals coagulation takes place much more rapidly than in man; and in some species of birds the change is almost instantaneous. God has provided that safeguard for them instead of surgeons.

It has long been a noticeable fact that in savage tribes this coagulation takes place so rapidly that wounds recover with remarkable quickness.

There is a very interesting and important physiological fact in connection with this difference between the blood of a drinker and that of an abstainer.

The fibrin in the blood of a drinker is diminished and the water is increased, thus greatly lessening the power of coagulation. So when savages have been brought under the influence of alcoholic drinks their wounds heal no more readily than those of our own kin who are drinkers.

So far as we know this is the main function of fibrin in the blood, it not being essential to the vivifying process. How important that it should not be depleted by the trespass of alcohol.

Looking at it in a commercial way there is quite a trading or interchange of materials going on in our bodies, in the throwing out of old matter and taking in new, which is notably marked in the changes between the blood and the tissues. The tissues receive their reparative supplies, their food and oxygen, and give off in return the waste or worn out matter.

Water plays a very important part in the great functional change, as all nutriment passing into the circulation is in a state of solution, and water is the solvent medium.

Alcohol introduced into the system retards the harmonious action by its attack upon the albumen of the

blood through its power to absorb the water, or by its coagulating power. The blood being thus poisoned (as we are warranted in terming it) is impeded in its distribution of reparative material, thus our energy, vigor and elasticity are weakened, to say the least.

In childhood particularly, are these results very prominent, in that the growth and development of the innumerable little cells of the body are impaired and the full physical perfection is often cut short in children who are allowed to indulge in beer, or any of the alcoholic beverages.

The knowledge of this fact has led dog dealers to the practice of administering daily potations of gin to young puppies to meet the demands of fanciers of small dogs, so when these little canines reach the mature age of dogdom, they present the stature of dwarfed puppydom only, by its depriving the corpuscles of a portion of their water, shrinking them in size and lessening their power for absorbing oxygen.

This has been fully demonstrated by experiments upon animals. Under such circumstances the tissues are subjected to oxygen starvation, by which, together with the narcotic poisoning effect of the alcohol, less heat is generated and the bodily powers of endurance are vastly lessened.

The organs of the body are made up of tissues, and each tissue is composed of innumerable little cells, too minute to be seen with the naked eye, but the microscope reveals their existence. each one has a little functional duty of its own, in absorbing from the blood just such nutriment as the organ to which it belongs requires. As the different parts increase in size the cells of the tissues enlarge proportionately, unless they be interrupted, as by the touch of alcohol.

A current of oxygen is being constantly carried from the air we breathe, by the blood, to all the tissues of the body, but particularly to the muscles, by the arteries, and at the same time the venous system of blood vessels carries off a current of carbonic acid and water, as previously noted.

Just how this physiological or chemical change takes place we do not know. We do know the fact of the change, but we have not yet satisfactorily fathomed its true *modus operandi*.

There are several hypotheses declared however, some of which seem quite reasonably founded. For instance, some physiologists aver that the muscle has the power of absorbing or taking up the oxygen from the *haemoglobin* of the blood and in some way utilizing it as contractile producing material. That theory seems to be reasonably well founded.

Others speculate on the theory that the chemical change in the muscle partakes of a fermentive nature, creating or setting free, heat and force by a sort of subordinate oxydation in the arterial blood, by the particles breaking up and forming simpler products. Then others and quite as vague theories are advanced which are too hypothetical for consideration.

Suffice it to say, that the *haemoglobin* comprises about ninety per cent. of the red corpuscles of the blood when dried, and is the transporter of the oxygen in that vital fluid; and that when alcohol is taken into the system it poisons those little blood molecules and deranges the whole process of oxygenation, and the entire system is thrown into discord by it.

That the blood is the vital fluid of life there is no dispute. To-day transfusion of the blood of an animal

into the circulatory system of man is sometimes practiced and a valuable life snatched almost from the grave and saved by it. How important it is then, that it should be kept free from the contaminating influence of such an intruder as alcohol.

Transfusion of this life giving fluid is no new operation. It was a subject of much interest in the 17th century. The blood of a calf was once transmitted to a maniac which restored his reason.

The vitality of animals has been restored by this process of transfusion after all signs of respiration had ceased.

Is it a physiological fact that our business men require alcohol to aid them in their mental strain to which they are subjected, to keep their brains well balanced, their minds clear and their business faculties tuned up to a high pitch of perfection?

Our study of the stupefying and poisonous effects of those beverages teach us most unmistakably in the negative.

Do business firms look for young men who are addicted to their cups, for salesmen and book keepers? Do railway corporations require their train dispatchers' conductors, engineers, switchmen and other employees to use alcoholic drinks to insure careful and safe management of their responsible business, and as a guarantee to the safe transportation of their thousands of human freight entrusted to their care?

No, indeed, but quite the reverse. Many of our railway corporations are so well versed in the dangerous results of those beverages, and the frequent disasters consequent upon their use that they would at once, without ceremony, discharge even the most

trusty of their employees if seen to be entering a drinking saloon.



## CHAPTER XXXVI.

### SUMMARY.

In the perusal of this course we have noticed facts which are beyond successful contradiction, facts that have been substantiated over and over again by observation and experimental investigations by hosts and hosts of the most learned scientists on both sides the sea which now stand as recorded scientific truths the world over.

Some of the axioms are so important they should be grouped together in a sort of compendium for the general reader, thus my excuse for recapitulation in this the closing article of the series.

We have seen that alcohol never digests food, nor does it even assist in the process, but actually impedes it; it creates no power nor strength, but does impart weakness.

That it does not create heat as some suppose, but deceives the untaught by diminishing his consciousness of the effects or changes which are wrought within him.

That it weakens the heart's action and even in moderate drinkers increases its rapidity by the paralyzing effect upon the little cardiac or heart vessels, thus lessening the propelling power of the muscle instead of augmenting it, permitting an undue amount of blood to flow through it while it poisons and deteriorates the



blood globules, lessens its oxygenation and decarbonization, two of the most important necessities in the living economy.

That it decreases the process of nutrition, secretion, elimination, effeminates the muscles, never acts as food by repairing or building up waste tissue, but is a general poison in health and sickness.

That it hardens the brain, changes the structure of the nerve fibre and lessens the *vaso motor* nerve power and influence, distorts and weakens the blood globules and deranges their functional offices.

That it inflames, congests and ulcerates the stomach and the whole of the alimentary canal, impairs the appetite, induces thirst and enervates the whole nervo-muscular system.

That the long continuance of alcohol even in limited quantities permanently changes the general structural portions of the body, particularly of the stomach, liver, kidneys, heart, blood vessels and nerves.

That these distortions or changes are more common in daily habitual drinkers than in the periodical drinker who has lucid intervals, as it were, when he drops off the practice for a time giving nature a chance to recuperate.

That the more steadily the drinker keeps his blood charged with alcohol, even in moderate quantities, the greater is the danger to dropsies of the liver and kidneys with enlargement of those organs, fatty degeneration, apoplexy, heart failure, gout, paralysis, etc.

That poorly areated or oxygenated blood unbalances the brain the seat of the mind, and weakens every tissue in the body thus deranging the general working of the nervo-muscular portions of the human mechanism.

That to keep up a perfectly working system the supply of blood must be free and uninterrupted and thoroughly oxygenated.

That our muscular system is nourished and kept up by food, but to keep it in operation, oxygen, a steady constant supply is required, which is furnished through the blood.

That whenever that supply is interrupted by the admixture of alcohol with the blood which deprives it of its full power of oxygenation, it is plain, even for a layman to see how nature is interrupted and thwarted in her designs and fails in her mission.

That in consequence of this trespass the removal of effete matter collecting on the tissues is interrupted and thus the tendency to fatty degeneration, especially after middle life.

That this same cause also weakens or diminishes the necessary nutrition for the nerve substance and brain, thereby weakening those organs and at times, at least, the mind becomes unbalanced, the key to the great list of crimes, the records of which blacken the pages of our law libraries.

That the universal effect of alcohol is deterioration of morals, beclouded intellects, mystified judgement, enfeebled reasoning powers and depleted physical qualities which uman so many of our race.

That the liability to heredity is a fixed physiological law of nature, that the poorly born must suffer for the sins of their parents, and that pain, disease, debility, suffering and brevity of existence are vociferous giants along the pathway of inherited evil.

In the language of Horace Mann, "So universal and long continued have been the violations of the physical

laws, and so omnipresent is human suffering as a consequence, that the very tradition of a perfect state of health has died out from among men. We are wanted to the presence of debility and pain."

We have also seen that the abnormal growths, those springs or strings of hardened albumen in the drunkard's blood, are, as declared by scientists, shoots springing out from the red blood disks, and Dr. Harriman, unquestioned authority, says that in all his examinations (which were numerous) he never saw that peculiar kind of sprout except in the blood of a confirmed drunkard. What must be the condition of the offspring from such a parentage?

That the brain receives a very large amount of blood to supply it with force for its great and important functional duties, and the badly fed brain helps to account for the mental depravity of the drunkard.

That alcohol is alcohol when taken into the stomach, is alcohol when it escapes, leaving no possible clue to any portion of it, worthy of note, having been utilized as food.

That in its passage through the system it leaves its poisonous sting behind it in the form of Bright's disease, diabetes, diseased liver, kidneys, lungs, heart, bladder, brain, etc., etc.

That it is a trespassing enemy from the time it enters the organism until it is expelled, demonstrating none of the elements that go to make up or repair any of the human viscera.

That from the time it is swallowed the excretory organs of the body; the lungs, kidneys and skin are hard at work throwing it out, and the whole surrounding atmosphere of a drunkard is charged with its efflu-

vium and one almost experiences the disgusting presence of the distillery, the drinker having made himself so much of a traveling filtering pot.

That alcohol is not a solvent of animal matter, but is a hardener and preservative of it, the fluid in use all over the civilized world for preserving anatomical specimens: tumors, amputated limbs, diseased specimens of all kinds, abnormal foetus, snakes, lizzards, toads, &c. &c.

The fact was recorded a few years ago that a cask of snakes, toads, &c. preserved in alcohol was sent from the West to the Smithsonian institute at Washington, and that on the way the sailors got on the scent of it, tapped the vessel and drank the liquor. We are not informed whether or not they subsequently saw snakes but there must have been a strong flavor of snakehood.

An English Admiral died away from home and his remains were shipped back in a cask of spirits and on the voyge it was discovered that the sailors were more than usually hilareous and intoxicated, when a thorough watch was instituted to ascertain if possible the source of their supplies. At length one of the laddies, a little too tipsey to keep a secret, said, "We have tapped the Admiral."

Yet that class of idiots and many of their betters will drink beer, whiskey, rum, or brandy to help their stomachs to digest a roast beef dinner. "Consistency thou art a jewel."

That muscles are weakened by the influence of alcohol as is readily indicated by their appearance, as for instance a muscle taken from the leg or arm of one who was an abstainer from intoxicating drinks, is

found to be of a bright color, glossy and firm, while a corresponding one from the body of a drunkard is pale soft, flabby and of an oily appearance from the deposit of oil globules from the blood.

That if the surgeon cut into the muscle of a dead drunkard the blade of his scalpel will be studded with little globules of grease, but if he were to cut into a corresponding muscle of one who had been an abstainer the blade would be apparently bright and clean.

That under many of these diseased conditions the heart sometimes suddenly ceases to act, and we are told that the poor victim died of heart failure, and that was no lie, for it failed most signally.

That occasional drinking leads to habit, to tippling, to vice to disease, to irregularity of temper, to crime, to punishment, and often to death and hell. What a stock in trade to hand down to posterity, in face of the fact that physical and spiritual indentity go hand in hand with parent and child.

ADDENDUM.

## CHAPTER XXXVII.

## THE TOBACCO EVIL.

Long years ago a weed was discovered in Yucatan, which attracted great attention. Then it found a foothold in Spain, in the fifteenth century, where it cultivated hordes of devotees. Then it presented its compliments to Portugal, where it found ready worshipers. Then the French Plenipotentiaries introduced it into Paris and it enslaved the French Empire in short order. After which Sir Walter Raleigh presented it to the favorable notice of England and that Kingdom soon found itself tight in the grasp of its fascination, and so it spread until the whole world was cursed with its influence while the devil sat laughing at its triumphal march and the great mission work it was achieving for his kingdom, and to-day it holds in its bonds more victims than all the other slaveries combined.

They denominated this king of the earth, tobacco. Everywhere we go we meet pale-faced, peevish, irritable, hectic, dyspeptic men and boys with weakened nervous systems and failing hearts from their enslavement by tobacco.

Of all men those leading sedentary lives should scrupulously avoid tobacco in all its forms. The best medical testimony in the world is agreed that its use produces all the above mentioned evils and vastly more, that it not only enfeebles the nervous system but produces the same effect upon the muscular organism also. That it causes dryness of the throat, bronchitis, ulceration, cancer of the lips, mouth, tongue and throat.

Often has cancer of the lip come under my observa-



tion as a medical and surgical practitioner. And now I frequently see men, each with a blue spot on his lip where the stem of the loathsome old pipe rests, and I pity the poor souls, for I know the trouble and suffering that is in store for them.

It is a recorded historic fact that the Turkish nation is enfeebled and dwarfed by tobacco, thus accounting for their unfitness for, and failure as soldiers, always being defeated, their nerves and muscular systems enervated and they are physically unmanned.

Of course there are those who use tobacco through life almost, and die in ripe old age, but that does not preclude the physiological fact that the maladies cited, and many more, are the direct outcome of the tobacco habit, and that shattered constitutions and premature death are daily results of the pernicious practice of tobacco using.

One noted writer says: "The chief evil in tobacco taken in any way, is that it leads myriads and myriads to the habitual use of ardent spirits and opium, and consequently to the ruin of soul, body and estate."

That nearly all drinkers are tobacco users is an uncontrovertible fact, yet it does not follow that all tobacco users are drinkers of ardent spirits. But with the above cited opinion that tobacco is a broad stepping-stone to the intoxicating cup I most fully concur.

From a pathological standpoint, one of the most important facts to be gathered upon the question of tobacco using is from the pen of the great German Chemist, Liebig, who is of the highest authority. He says: "Smoking cigars is prejudicial to health, as much gaseous carbon is injuriously inhaled that robs the system of its oxygen."

Oxygen being the life-giving property to the blood, is one of the most important elements in our physical economy, and the whole system is thrown into discord when its vital functions are trespassed upon, showing tobacco smoke to be a vile intruder of a most damaging character.

The oxygen of the blood being thus interfered with the poison irritates and disturbs the general nervous system, particularly that of the heart, which accounts for smokers' irregular or unsteady heart action, palpitation, etc.

Tobacco slaves are not infrequently called suddenly hence with what is termed tobacco heart, noticed in the obituary columns as heart failure.

Surely they are in every sense of the word, heart failures, and tobacco caused the wrecks.

Tobacco, instead of exciting and arousing the action of the heart, has the opposite effect, acting as a depressent. Its use has become a fashion, so to speak, and the human organism, though poisoned by its first reception, at length adapts itself to the depressing effects of the poison, and in its limited use the early morbid manifestations; then it promptly asserts its power over the victim, which is generally hard to overthrow.

Alcohol and tobacco seem to be twin demons in their destructive works, quite apt to go hand in hand together, although one is a stimulant and excitant while the other is a narcotic or depressent. In fact nothing more rare could be found than a confirmed liquor drinker who did not also use tobacco.

The rising generation is being thoroughly impregnated with and ruined by this world-wide tobacco habit.

I do not write this article with the expectation that it will persuade many, if any, confirmed tobacco users to abandon the habit, but in the hope that it may arouse thought among the young and lead some at least to shun the loathesome results and bodily injuries which are so manifest among many of its devotees.

While we constantly see around us men who have been slaves to the habit of tobacco-using for years, apparently in good health, we are too likely not to think of the other side of this revolting picture. We almost forget the terrible inroads it is making among the boys of to-day, dwarfing, depleating, stupefying the brain, enervating the nervo-muscular system and impairing the intellect. We forget that the young are vastly more susceptible to narcotic poisoning than those of adult years. We forget that more than a score of diseases are traceable to the use of the weed.

None so well as the medical man knows how many, many cases of ulcerated mouth, chronic bronchitis and epithelial cancer are caused by tobacco. They are common.

With the declarations of many of our learned scientists I fully agree, judging from my own personal observations in thirty years of medical practice, that very few, if any, who smoke tobacco in youth, prior to the development of manhood, ever make vigorous men. Neither are they as intellectually brilliant.

Tobacco poisons the blood, impairs digestion, depresses the vital powers, weakens the heart, causes muscular tremor, thins the blood, increases salivary secretion, and weakens the glands thus secreting. When carried to excess by boys, it engenders nervous paroxysms, irritability of temper, (the latter being

very common with adults also), and not infrequently aberration of mind, and sometimes epileptic fits.

The effects primarily manifested eventually become tolerated by adaptation of the system to them by continued use of the poison though permanent pathological changes are all the time taking place.

Were it not for the powerful excretory efforts of the lungs, kidneys and skin in throwing off much of the tobacco poison taken into the system, death at a very early period would inevitably follow, and yet there is always enough in the system to produce untold mischief.

The whole physical organism is enslaved by it. Men under its influence often make desperate efforts to abandon its use, when in many instances they become totally unmanned in the effort, unfitted for any business, nervous and almost wild ; to be calmed only by resorting again to the poison to which the system has accommodated itself and upon which, in its abnormal state, it has to depend for its accustomed narcoticism.

All these things considered, is it not the bounden duty of parents in this fast day and age of the world to be particularly careful of the examples they set before their children ?

No parent should ever be seen by a child, tipping the wineglass or the beer mug or indulging in the use of tobacco in any form. Children are great imitators, and that which father or mother does is the end of the law with them, which is always looked upon as being just the right thing for them to do also. Parents should be particularly careful, God has placed those responsibilities in their hands and they have no moral

right to indulge in anything that may tempt their children to contract habits that will antagonize the law of God laid down for the government of the world, that may injure health, ruin prospects, blight character, and dwarf manliness.



## CHAPTER XXXVIII.

### THE TOBACCO EVIL.--continued.

Oh, that young men could be educated up to the dangers of tobacco using. It is said that Jerusalem was destroyed because the instruction of the young was neglected. Emerson says, "Tobacco, what a rude crowbar is that with which to pry into the delicate tissues of the brain." Tobacco lowers the spirits, weakens the memory, pollutes the breath, sallows the skin, impairs the stomach, irritates the nerves, bids defiance to purity and trespasses upon courtesy."

Boys who smoke grow thin, irritable and pallid. The great scientist, Decaisen, says, "It lowers the intelligence of young men."

According to the testimony of teachers in public schools in various parts of the world, tobacco produces a very baneful effect upon students who are addicted to its use. In many of them, notably in the polytechnic schools of France, cigarette smokers in comparison with abstainers are far behind in their studies, dull of comprehension, obtuse in intellect. and so marked is the difference that the authorities have prohibited the

use of tobacco in all government schools. A wise provision.

To persons of nervous and irritable constitutions, tobacco is unmistakably injurious. It sends its poisonous shafts into the nervous system by depleting or weakening Nature's required stock of cerebral or brain stimuli, leaving that organ short of its normal and necessary supply, its functions impaired and rendered less capable of being aroused to their natural activity. Thus the trembling hands of so many smokers.

"Hyperasthesia or excessive sensibility, neuralgia, irritability and various hallucinations are among tobacco smoker's comforts, and they often wonder why they feel so strangely," says Decaisen.

Among the dangerous pathological effects of the weed, those manifested upon the nerves of the eye are common, impairing the organs of vision in the form of conjunctivitis or ophthalmia, diplopia or double vision and amaurosis or diminutive sight, often attended with vertigo.

Persons addicted to nervous derangements and those predisposed to dyspepsia or hypochondriasis pay a large bonus for the pleasure they derive from smoking. Yet it is computed that 1,500,000 acres of the most productive of earth's surface is polluted in raising tobacco.

Saying nothing of the disgusting and filthy habit of smoking one would think its pathological results are enough to drive the practice out of existence. Though not looked upon by the casual observer to be harmful, tobacco is nevertheless extremely damaging to the human organism. By its depressing effect upon the



heart we can readily account for so much nervous irritability as exists among the slaves to its use.

Of all the bondages of man, contracted by his own habits, that of tobacco using is the most difficult to throw off, not excepting that of opium even.

While to rid one's self of the liquor habit is painfully difficult, that of tobacco is more so. They seem to be twin demons in the devil's family, closely allied in their trespasses upon the human economy, although one excites and the other depresses certain component parts of the human organism. Its most alarming inroads in society are fearfully manifested among the boys of to-day. In many of the schools of this and other lands, it is found that young men addicted to the habit of

#### CIGARETTE SMOKING

are notably behind in all their studies, slow of comprehension and doltish in intellect. It weakens the nervo-mental and muscular powers and dwarfs intellect. Not only that, but often cuts short manly development by robbing the blood of its requisite amount of oxygen.

In every instance it over-taxes the excretory organs in throwing off the poison from the system through the lungs, skin, kidneys, etc.

The use of cigarettes in our large towns and cities is becoming very alarming, especially so, as tobacco obstructs the development of body and mind. In the young it is particularly marked in the way of mental weakness and muscular debility.

The cigarette said, "I am not much of a mathematician, but I can add to a man's nervous troubles, subtract from his physical energy, multiply his aches and



pains, and divide his mental powers, and I can take interest from his work and discount his chances of success." (Do not know the author's name.)

Boys indulge almost exclusively in cigarettes, and in addition to the poisonous effects of tobacco, they are subjected to the irritating smoke of the paper covers, which is very injurious to the lungs.

One of our New York Oculists has said that the greatest enemy to the eye of young men is the cigarette. Not long since a disease made its appearance among smokers which has proven itself a dangerous and formidable one, and some of the ablest of our medical fraternity investigated thoroughly for some time and finally traced it to cigarettes. It is now known as the "cigarette eye," and can be cured only by long and continued treatment.

Its symptoms are a dimness of sight, a film-like formation over the eye-ball, which appears and disappears at intervals.

One of the investigating physicians had a cigarette analyzed, and found the startling result which has been many times since verified by other chemists, that the tobacco was found to be strongly impregnated with opium; while the wrapper, which was warranted to be rice paper, was proven to be the most ordinary quality of paper, whitened with arsenic, the two poisons combined being present in sufficient quantities to create in the smoker the habit of using opium without his being aware of it, and which craving can only be satisfied by the incessant use of cigarettes.

Cigarette smoking is not confined to boys alone, but adults are being entrapped in the same snare. A man living in Brooklyn, N. Y. twenty-seven years of age

who had a wife and one child, contracted the habit of cigarette smoking and became a bounden slave to it, smoking on an average of one hundred cigarettes each day. Physicians warned him of the danger, his wife entreated him to brake off the habit, but his will power was to much weakened to carry any such resolution into effect.

On Sunday December 25th, 1901, while reading a paper, and puffing at a cigarettee he was taken suddenly ill. A call was at once sent to a hospital and the summons was immediately answered by a physician who found the man was suffering from apoplexy. and hastened with him to the hospital. When he recovered to consciousness he informed the House Surgeon of his smoking habit. But he could not be saved and on January 2d he died.

The autopsy revealed the presence of a clot of blood within the brain because of the weakened condition of the blood vessels of that organ, caused by smoking. His whole system was found to be impregnated with nicotine. Thousands more are on the same road to untimely deaths from cigarette smoking.

So direful have been the results of smoking among boys in Norway that a law has been passed forbidding the sale of the weed to any boy not over sixteen years of age, without a written order from some adult relative or his employer.

Foreign tourists make themselves liable to prosecution under the law if they offer cigarettes, cigats and pipes seen in use by boys on the public streets.

The law of nature in the young of steady uninterrupted growth. Any interference with the functional offices of the heart or stomach, thus obstructing the

perfect oxydation of the blood, which tobacco does in a marked degree, must of necessity greatly interrupt nature's steady growth and development as we so constantly observe in the waifs of to-day.

The interference with nature's assimilation of food and air deranges the nervous system, leading to irritability, peevishness, lack of energy, insomnia, sometimes epilepsy and other nervous maladies.

It is an indisputable fact that the thirst produced by tobacco smoking leads myriads of boys to drinking beer, from that to stronger drinks by which time, as a rule, their doom is sealed. Boys not yet out of short pants are daily seen strutting about the streets puffing away at loathsome cigarettes.

What other narcotics they are breathing into their systems which added to the cheap tobacco of the cigarette can only be told by chemical analysis. Many of these little lads must of necessity, if they follow up their smoking habits, become feeble minded.

The nicotine they are introducing into their systems is a deadly poison and must, in the natural course of events, dwarf the development of mind and body to a greater or less degree. For instance, take a single cigarette or its equivalent of tobacco, and macerate it for a short time in a little warm water, enough to cover it nicely and inject a small quantity of the liquid under the skin of a cat, the animal will soon be thrown into convulsions, and in a very few minutes will die.

Dr. Kostrál, superintending physician to an immense State tobacco establishment near Vienna, Austria, published an account of the condition of those employed in the great manufactory, consisting of 1,942 men, women, boys and girls, ages ranging from 13 to

56 years. The establishment was well ventilated, yet the air they breathed was more or less pregnated with tobacco dust and nicotine, which was very injurious in its effects, especially upon the younger ones, a great many of whom died, while many more were ill from the poisonous effects of the weed.

Out of one hundred boys below the age of 16, seventy-two were taken ill, some with nervous derangements, some with congestion of the brain, others with palpitation of the heart, some with inflammation of the stomach or bowels, some with inflamed eyes, some with insomnia, etc., etc.

In addition to the physical damages consequent upon the tobacco habit, it is one of the most fruitful sources of evil, leading to vicious associations with other boys. They encourage each other in the pernicious practices following the habit.

In country towns the cigarette habit calls to its companionship the use of cider, while in the cities beer is resorted to. One or the other, or both are almost sure to be found hand in hand with the cigarette among boys and young men.

Cider, which is strongly impregnated with alcohol is one of the most insidious intoxicants in the whole catalogue of intoxicating beverages. It is to the young a gav deceiver, indulged in as a simple, harmless drink while all the time it is full of the devil in disguise. It makes many drunkards, and a cider drunkard is the meanest, most crabbed and disagreeable of all inebriates.

Josh Billings once said, "Cider may be a good temperance drink, but I can get so drunk on it that I can't tell one of the ten commandments from the by-laws of a base-ball club."

Thousands of young men robbed of respectability, purity and clean characters are led into the pit of darkness by tobacco, cider and beer, as I previously said.

All tobacco users are by no manner of means addicted to the intoxicating cup, but those who are habitual liquor drinkers and do not use tobacco are very rare specimens of humanity.

The use of tobacco is, at least, a dangerous open doorway to the worship of the bottle. Beware young man ere the pit of degerdation and drunkenness swallows you up.

In the language of Tom Hood: "Oh God that bread should be so dear and flesh and blood so cheap."



JUL 14 1903





LIBRARY OF CONGRESS



00025883548

